

Manufacturers Record

Reg. U. S. Patent Office



DECEMBER 1933

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QUESTIONABLE SECURITIES

There may be defects in the New Securities Act as investment bankers claim, but there have been grievous defects in laws that permitted financial institutions and brokers to sell questionable securities to tens of thousands of innocent people who have found their so-called guaranteed mortgages and bonds failing to pay interest and the collection of the principal in doubt.

There also has been something wrong with a course which, as there was no legal responsibility, urged upon small banks the purchase of foreign securities that have since sold at 5 per cent of their face amount.

For years there has been hammered at the small banks by the large banks of the country the necessity of having secondary reserves represented in a bond account. And strange to say, by reason of the character of the securities sold them, this has been the principal source of the small banks' losses.

The public has been reading some revealing evidence from Washington as the Senate investigating committee has pursued its work. Practices in high places have shaken confidence, delayed investment at the present time and kept money in hiding.

Some changes may be desirable in the New Securities Act, but it should retain provisions that will prevent as far as possible unscrupulous practices that have brought worthy people to distress.

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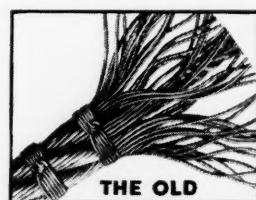
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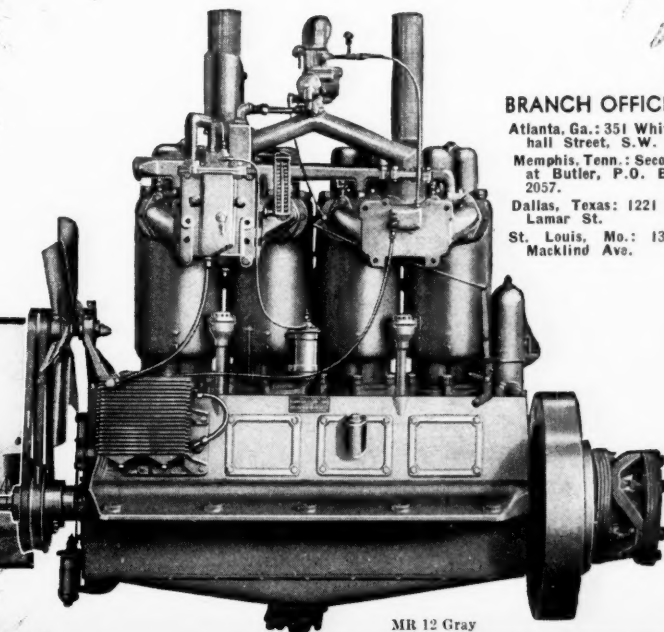
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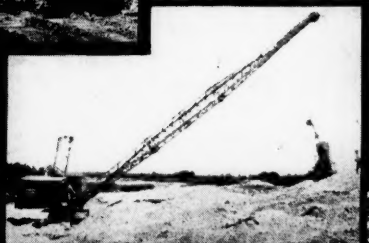
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Specify

**PENNVERNON
WINDOW GLASS**

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**DECEMBER
1933**

Vol. CII No. 12

MANUFACTURERS RECORD

Devoted to the Upbuilding of the
Nation Through the Development
of the South and Southwest as the
Nation's Greatest Material Asset

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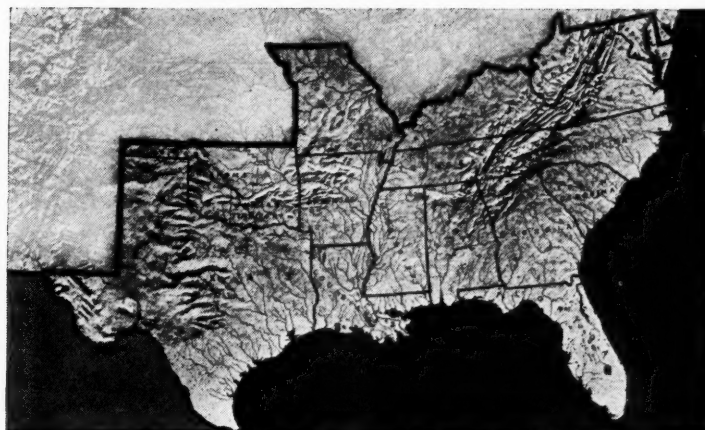
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DECEMBER NINETEEN THIRTY-THREE



The South has 31.8 Per Cent of the Land Area and 33.6 Per Cent of the
Population of the United States

EDITORIALS

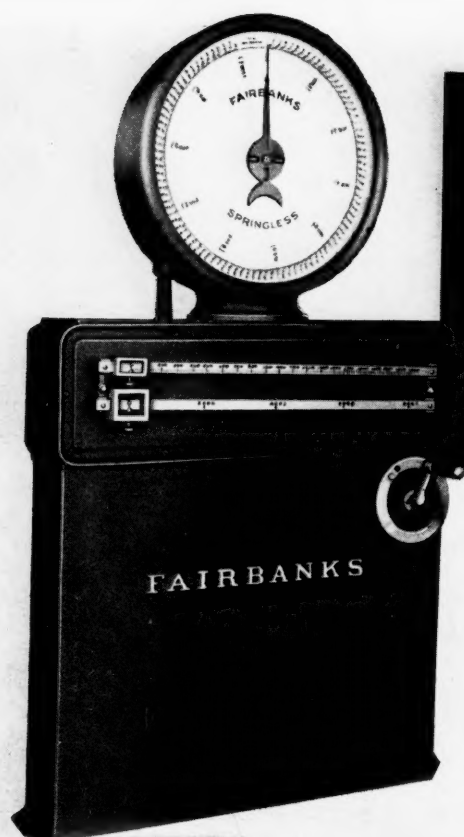
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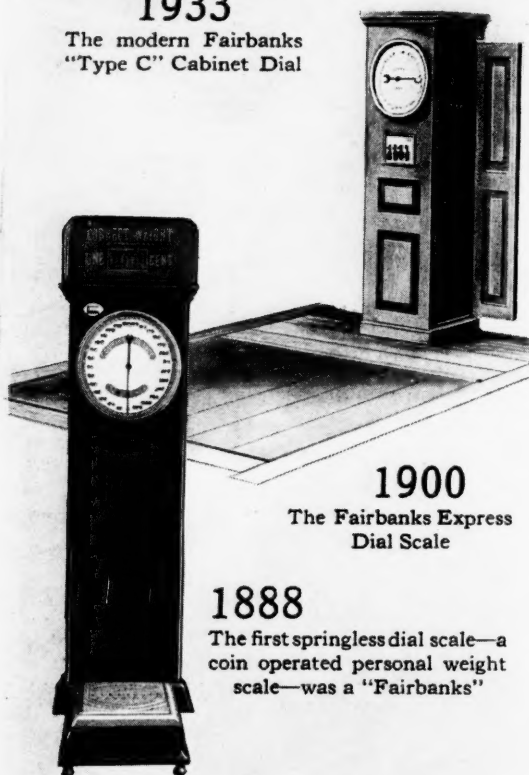
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1933

The modern Fairbanks
"Type C" Cabinet Dial



1900

The Fairbanks Express
Dial Scale

1888

The first springless dial scale—a
coin operated personal weight
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service for one calendar
year show 5,890 dials in
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*An average of 24.5 dial-
years per repair or re-
placement.*

Fairbanks Scales



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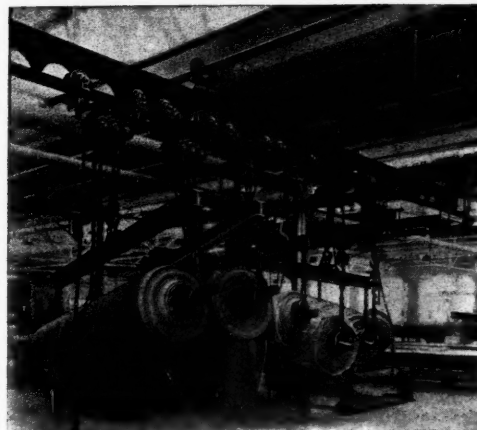
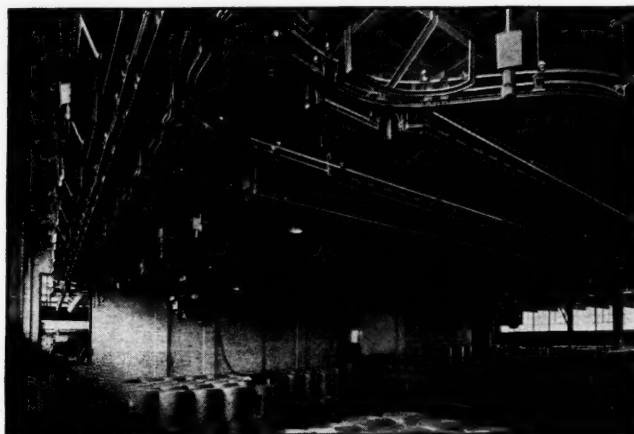
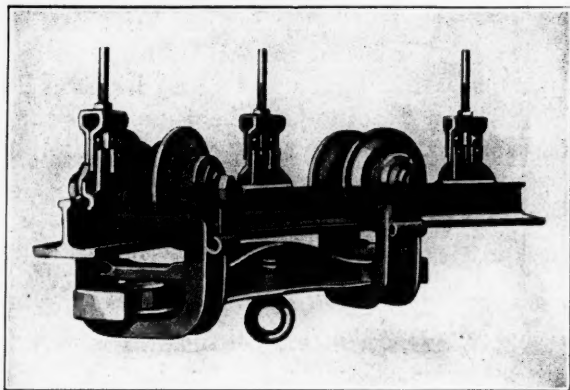
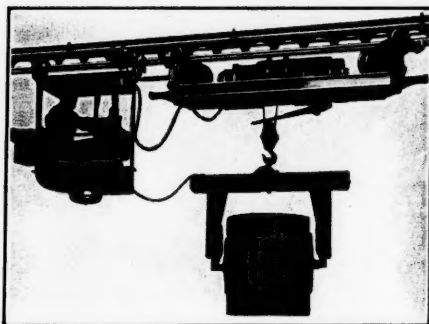
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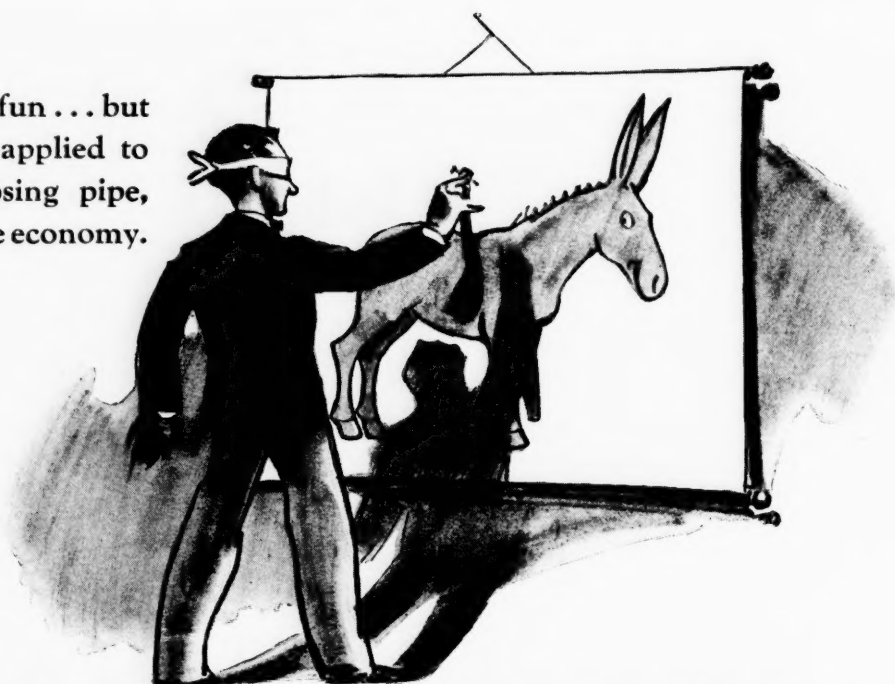
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CLEVELAND

HAND OR ELECTRIC TRAMRAIL

blindfold games may be fun . . . but they're *expensive* when applied to pipe selection. In choosing pipe, KNOWLEDGE means true economy.



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You are putting the **RIGHT** pipe in the **RIGHT** place . . .

You don't need to be an expert to be *right every time* on pipe selection. Answer two simple questions and you'll **KNOW** that the pipe you choose will serve long and satisfactorily. Those questions are, "What are the conditions under which the pipe must serve?" and "Which kind of pipe meets the conditions *best*?"

Where corrosion is severe . . . where vibration and strain must be resisted . . . where high temper-

atures or abrasive action must be overcome . . . Reading Genuine Puddled Wrought Iron Pipe is **THE** pipe. Under such conditions it saves the *most* money by lasting the longest. And that isn't hearsay . . . it's a fact proved by four generations of actual use in the Nation's buildings and industries.

When Reading Genuine Puddled Wrought Iron Pipe is needed, be sure that you get it!

Here are Some of the Places Where Reading Genuine Puddled Wrought Iron Pipe Serves Best

- **For Cold and Hot Water Lines**
Reading Puddled Iron Pipe assures *generations* of trouble-free service with all ordinarily corrosive waters. In thousands of such installations, it has been proved that the life of Reading Pipe is from two to five times longer than that of ordinary pipe.
- **For Drains**
Alternating wet and dry conditions often mean swift death for most kinds of pipe. Reading Puddled Iron Pipe is especially adapted to give long service under such conditions.

- **For Heating Supply Risers, Distributing Mains and Return Lines**
Due to its high melting point (300 Degrees F. higher than that of steel) and because of the presence of non-metallic silicate, Reading Puddled Iron is far less subject to destructive oxidation than other ferrous metals.
- **For Vents**
When exposed to atmospheric corrosion, Reading Puddled Iron Pipe forms *two* hard impervious films of oxide which effectively prevent destructive pitting and penetration of rust. Corrosion is actually *stifled*.

READING GENUINE PUDDLED
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WROUGHT IRON
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MANUFACTURERS RECORD FOR

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FOR ROAD BUILDING

IF YOU are taking part in the Government's great road-building program or other projects in connection with highway construction, you will find the use of explosives necessary in various phases of your work.

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The following specifications are furnished by du Pont engineers, who have observed the performances of explosives on a great many projects throughout the country:

Inquiries relating to selection and use of explosives should be addressed to any of our Branch Offices, or to

E. I. DU PONT DE NEMOURS & CO., INC.

**Explosives Department
Wilmington, Delaware**

BRANCH OFFICES: Birmingham, Chicago, Denver, Duluth, Huntington, Joplin, New York, Pittsburgh, Scranton, Seattle.



CERTIFICATE OF COMPLIANCE FILED BY EXPLOSIVES DEPARTMENT

WORK	BRANDS	INSTRUCTIONS FOR USING
THOROUGH CUTS	Du Pont Quarry Gelatin Red Cross Extra Red Cross Blasting Powder— Free Running R. R. P.	When cutting through a hill the explosive to select depends upon the nature of the rock and working conditions. Quarry Gelatin for wet outside work; higher strengths for hard rock, and lower ones for soft rocks. If holes are not particularly moist, Red Cross Extra. For deep holes in fairly dry work, the Free Running Red Cross Blasting Powders are economical.
SIDE HILL CUTS	Du Pont Quarry Gelatin Red Cross Extra Red Cross Blasting Powder— Free Running Blasting Powder	Hard rock, Quarry Gelatin; softer materials, Red Cross Extra grades, or in dry work, Free Running Red Cross Blasting, or granular black powder. In working from the side, if excavated material is to be used for filling, loads should be barely heavy enough to break ground for convenient handling. In working from the end, rules for thorough cuts apply. Use same explosives.
EARTH SIDE HILL CUTS	Red Cross Extra —20% Red Cross Blasting Powder No. 2 — Free Running Blasting Powder	Loosen ground with light blasts for road machines, or hand digging. Blast trees, stumps and boulders from side and out-fall ditches. Widen and straighten cuts and blast down gravel with Red Cross Extra 20%, Red Cross Blasting No. 2 F. R., or blasting powder.
GRAVEL PITS	Red Cross Extra —20% Red Cross Blasting Powder No. 2 — Free Running	In blasting to obtain grading material, holes are spaced as for other blasting. If rock is not encountered, holes are loaded lighter, merely to loosen material for easy digging. Use Red Cross Extra 20% and Red Cross Blasting No. 2 F. R.
BOULDERS	Red Cross Extra —20%—40% Du Pont Extra D Agritol	For mudcapping, remove dynamite from shell, pack it in a conical heap on the boulder; insert cap and fuse, cover explosive with several inches of thick, heavy mud. Never lay stones on top of mudcap. For snake-holing, punch hole beneath and against boulder. Tamp charge compactly. Use Red Cross Extra 20% or 40%, du Pont Extra D, or Agritol where heavy soil under boulders provides required resistance.
QUARRYING	Red Cross Extra —40% Du Pont Extra Du Pont Quarry Gelatin Du Pont Gelatin Gelex	To crush stone for road building, use Red Cross 40%, du Pont Extra, Gelatin, or Gelex. Tamp holes well and fire simultaneously. For quarrying dimension stone, use blasting powder of fine granulation to start cracks and seams in desired direction. For extremely hard rock, du Pont Quarry Gelatin.
FILL SETTLEMENT	Du Pont Ditching Du Pont Gelatin —40%	Use dynamite for removing unstable material from roadbeds and to create cavities for the fill to drop into; also to stir up and liquefy mud surrounding the cavity to permit rapid settlement of the fill. Du Pont Ditching Dynamite is particularly effective, because of its water-resisting and propagating qualities. If necessary to place explosive under fill, use du Pont 40% Gelatin in large cartridges.
DITCHING	Du Pont Ditching Dynamite	Ditches can be blasted in wet soil by the propagation method; the electric method can be used in wet or dry soil. In wet soil, du Pont Ditching Dynamite, which blasts by propagation, effects economies in time, labor and money.
STUMPS	Red Cross Extra —40% Agritol Red Cross Extra —20% Loggers' Powder (Pacific States)	For blasting green, lateral rooted stumps, use 40% Red Cross. For tap-rooted stumps, Agritol, or, if soil is heavy, Red Cross Extra 20%; if light soil, Red Cross Extra 40%. Blast tap-rooted stumps out of light soil, with Red Cross Extra 40%. Du Pont Loggers' Powder for the Pacific Northwest.



**How many times have you said to yourself—
“NOW, IF I COULD BUILD MY OWN TRUCKS . . .”**

At least once in the business experience of every user of heavy duty commercial vehicles, this wish is silently expressed.

Yet—users who *know* the GMC Heavy Duty line agree that not even a built-to-order truck could more exactly meet their needs.

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Eleven basic GMC models cover the 5 to 15 ton range. GMC trailer models add capacities up to 22 tons. Six heavy duty engines—each one a 6-cylinder, valve-in-head, truck-built engine—provide a power range from 94 to 173 horsepower. Seven transmissions . . . 14 rear axles . . . 44 separate and distinct chassis—complete the selection of units in this outstanding line.

The choices and combinations which such a line as this permits will produce a vehicle entirely deserving of the title custom-built.

Yet—unlike a built-to-order truck—every GMC is a regular, precision production vehicle! Uniform parts . . . a uniform high standard of workmanship . . . a uniform service policy . . . are available with GMCs!

And, in addition to the Heavy Duty line, an equally comprehensive range of light and medium duty vehicles is offered for the 1½ to 4½ ton field.

So—next time you consider purchasing truck or trailer equipment that is tailored to your requirements—investigate, *first of all*, the GMC line! If you wish further details now, write or wire direct.

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• Manufacturers Record •

GREATER PROTECTION NEEDED

American producers under the N. R. A. program must secure greater protection against foreign goods. Several complaints have been filed against competitive imports in recent weeks and the number of such complaints will increase as the industries operating under the N. R. A. codes must raise prices to continue the increased wage scales that have been adopted.

Our manufacturers with increased production costs are not able to meet prices of low-labor-cost foreign commodities offered in competition with American products.

To bring about a proper adjustment of inequalities that have developed in this situation, the Imports Division of the N. R. A. has been organized. It will receive complaints concerning imports that seriously endanger the maintenance of codes under the N. R. A. The Imports Division, Oscar B. Ryder, chief, will examine complaints to determine whether the facts warrant the President ordering a further investigation by the Tariff Commission. After the Tariff Commission makes its report, the President, if the report is favorable to the complainant, may take whatever action may be necessary to safeguard the codes of fair competition. While this set-up may mean delay in securing relief for the affected industries at least consideration will be given to the need for tariff revision upward.

L. S. Cates, president of the Phelps Dodge Corporation, referring to the necessity of maintaining the copper tariff, says that a sufficient tariff on copper guarantees the United States producer at least his domestic market, for the present 4 cents a pound tariff rate restored our own copper market and in fact allowed us to become net exporters to a moderate degree. Before we obtained our tariff the foreign producers were gradually taking our own market away from us, as trade charts show. As with copper, so with other American products that have been able to meet foreign competition by adequate tariff protection.

What of industries that are not adequately protected? Their situation is strikingly brought home

to the American people in the announcement, on November 29, that the American Sugar Refining Company has been forced to shut down its Baltimore and Philadelphia refineries because its volume of business has been displaced by importations of refined sugar.

Earl D. Babst, chairman of the American Sugar Refining Company, in making the announcement, "regrets that the action was necessary, for we appreciate the effect on our employees and supply firms, and those dependent upon them. This crisis has been forced upon us by the failure of the 1930 tariff to provide any protection on refined sugar imports in face of an increased tariff on raw sugar." He points out that it is a disappointing example of a Federal policy that a modern and model sugar refinery, of 15 buildings on 21 acres, in the heart of Baltimore, employing hundreds of men and women, halts and struggles to exist, while subsequently built and tariff fostered refineries in Cuba, Puerto Rico and the Philippines, hum with orders to supply the people of Maryland, Virginia, the Carolinas and the District of Columbia. Canada, Great Britain, France, Holland and other countries have safeguarded their refining industry, even against sugar refined in their colonies.

Such a situation is obviously unfair to labor and industry and with American industries operating under the higher wage scales of the N. R. A. program it becomes increasingly evident that there must be a revision upward in many tariff schedules or else there will be more plants and more employees listed among the victims of an inadequate tariff policy.

RETARDING RECOVERY

ROBERT L. LUND, President of the National Association of Manufacturers, and member of the N. R. A. Industrial Advisory Board, has written an article which appears in this issue. It expresses what is in the minds of the business men of this country as one of the major causes

of delay in restoring normal conditions in industry. Mr. Lund says:

"It was unnecessary and extremely unfortunate that the labor clauses were written into the Recovery Act. The effect has been to make it a labor law rather than a recovery law."

These clauses have been the reason for more controversy and more misunderstanding than other sections of an Act which is not particularly notable for the clarity of its provisions.

Mr. Lund makes a clear and convincing statement that will command deserved attention. It is altogether probable that the verdict of the future will be that the cause of labor has been harmed and not helped by the inclusion in the Act of these unnecessary stipulations, and further by the wholly unjustified interpretation which unwise labor leaders have adopted.

CONTROLLED EDUCATION

DURING National Education Week the principles of the N.R.A. and the N.R.A. were taught in the high schools of the District of Columbia. Instructors were told by the Superintendent of Education to plan a program based on information in pamphlets "gleaned by history department heads" and on other information as the teacher, by reading and research, might find desirable. The Education Department in its directions said "the program should be of an informative nature to bring all pupils an intelligent understanding of the program leading to industrial and financial recovery."

Thinking parents are keenly aware of the responsibility resting upon teachers to whom our young people are left for guidance during most of their waking hours. History in the making rarely gives a correct perspective, and information about current events, when placed before children at a formative period of their lives, requires that the subject be handled from an unbiased standpoint and the pros and cons put fairly before them.

The wise teacher knows this. He or she knows the indelible impress they are making upon the lives and character of their pupils, but under the dictum of an Education Board is the teacher free to act as his or her own reading and own independence of ideas dictate?

With all the cooperation the country is giving the N.R.A., it is not a proven proposition. Business America sincerely and devoutly hopes it will accomplish its purpose, but as a permanent proposition there are many things in it that will have to be changed if it is to be a settled part of our future life. Its authors, knowing it was to be an experiment, regarded it only as a temporary measure and its duration is limited by the law that made it.

Is this what is being told the pupils of Washington?

We hope it is not a part of the activities of the publicity bureau for the N.R.A., because it may open the way for whatever party happens to be in power at Washington to introduce its political and economic ideas into our public schools. There has been too

active an effort in the past looking toward national control of public education to cause entire satisfaction to be felt about this move in the schools of Washington. It will be a sad day for the United States when its public schools are under the domination of a central educational agency.

Russia, in the establishment of State schools, has seen to it that the principles of communism are being drilled into children, who no doubt have little opportunity to study other political systems. The United States is not yet ready to establish a "National Recovery Academy" as a contemporary refers to this phase of activity at Washington.

STOPPING DEVELOPMENT

INDUSTRIAL development in the South, comparatively speaking, is in its infancy although it now has some of the largest plants in the world in their respective lines. The South is the country's largest producer of primary raw materials but as yet by no means fabricates or processes all the commodities it consumes. This is especially true in the manufactured foods group of industries. Therefore, the South has reason to be anxious as to the extent and terms of codes under the N. R. A. that would limit the building of new plants or the installation of additional productive machinery.

The recent threat to apply such a restrictive policy to other industries than cotton manufacturing has caused grave concern and brought protests against the Government sanctioning a movement that shuts off the South from the fullest development of its resources and greater employment for its people. By such a course the South is penalized to the advantage of other sections that have developed manufacturing to a high point.

Pointing out that the future industrial development of Texas is at stake, the Texas State Manufacturers Association says that it leads the nation in the production of wool and mohair but has no mills to convert these raw materials into finished goods. Texas leads the nation in the growing of cotton, but it only consumes 50,000 to 60,000 bales, about 1 per cent of its crop, in its established mills. The association asks, what chance will Texas have to develop and supply its own needs in these finished products if a rigid licensing provision limiting new plants is applied. For the past ten years many attempts to pass legislative measures that would restrict competition in certain Texas industries by prohibiting the establishment of new industries unless granted a permit by some State Board or Commission upon a showing of public necessity have been defeated, the Attorney General of the State ruling that such measures are unconstitutional.

The mineral production of Texas has an annual value of approximately half a billion dollars and yet, as the Texas State Manufacturers Association asserts, "in many lines the surface has hardly been scratched. Texas must continue in her industrial expansion, and we give warning now that we are not

going to stand still and let other sections of our country manufacture the finished products from our raw materials and keep their people employed by furnishing us with these commodities while our own people remain out of employment. Great changes have taken place in the industrial development of Texas during the past 20 years and greater changes may be looked for during the next 20 years if we only take advantage of the opportunities about us."

Other States in the South are in the same position as Texas in needing literally hundreds of industries to supply local demand and offer constant employment for the increasing population. Many of them are sensing the unfairness of a program that denies them the right to develop their own resources and meet the requirements of their own population.

The policy adopted in textiles and some other codes will hamper the development of more than one-third of the country and if extended generally will destroy the initiative and progressive spirit that has enabled this nation to advance to a preeminent position among the nations of the world.

THE FAIREST TAX

WE have pointed out in these columns in the past that to single out special industries and special commodities for taxation, levies an unfair charge which curtails their sale and turns buyers to substitute products that are not taxed. That consumers have been transferring their purchases to products not affected by a processing tax is shown by actual experience of the past few months. The effect of this is felt by farmers producing the commodities upon which the processing taxes are imposed and by the manufacturers of raw materials and their distributors. They have faced decreased demand. This decline has brought about a decline in prices which is the reverse of the objective sought.

Adoption of a minimum sales tax covering the broadest base is the fairest system of raising Government revenue that can be devised. Every form of special tax, such as the so-called "processing tax" and the gasoline tax, place restrictions upon the affected products in their competition with other commodities. They are penalized to the advantage of other products that can replace or be substituted for the taxed products. When these taxes are made unduly high, as is the gasoline tax, they engender evasions and practices that are harmful to legitimate distributors, besides depriving the Government of expected revenue.

The Government, to meet its expenses, must receive an adequate income. By establishing a minimum sales tax covering all products each industry would then be placed in the same position with respect to other industries and the Government would secure revenue from all. There would be no opportunity to evade the tax by turning to other untaxed commodities.

SOMETHING NEW

THE Paterson (N. J.) Evening News takes the Commonwealth & Southern Corporation to task for having written a letter to one of Paterson's silk manufacturers. The letter solicited consideration of the South and the advantages this section offers to silk manufacturers who should be interested in efficient operation and a stable labor supply.

A facsimile of the letter is printed on the front page of the New Jersey paper with an editorial, in which Patersonians are asked if they expect to "sit back and take it on the chin and grin, or fight."

In an article that accompanies the editorial, there is quoted "A Constant Reader" who suggests that the matter be taken up with Congress with the possible result of "launching an inquiry into the legality of methods employed to lure manufacturers from this to Southern cities."

"Constant reader" goes so far as to say "there are known cases where Southern Chambers of Commerce have donated sites for factories, they have obtained low construction estimates and they have underwritten in some cases all expenses of plant transfer."

The letter from the Commonwealth & Southern Corporation, appearing in the Paterson Evening News, is as follows:

"The South offers many advantages to silk manufacturers interested in efficient operation and a stable labor supply. Under present conditions many manufacturers now operating in congested areas are considering more favorable locations.

"The enclosed map indicates the extent of the regions served by our constituent companies,—an area sufficiently extensive to allow full latitude in applying your requirements to the proper location.

"Our experience in the location of silk plants and our contact with manufacturers has placed us in a position to furnish reliable data. If you are considering branch plant development, expansion or corrective relocation, the facilities of our organization are available."

This is a reasonable and legitimate suggestion offering to the silk manufacturer who cares to investigate the advantages which the South undoubtedly possesses the opportunity to prove the facts are as stated.

There have been a number of new things brought out lately, but this is the first time we have heard it may be illegal to solicit factories for the South by pointing out operating advantages and labor stability, low taxes and sometimes free plant sites in the effort to have manufacturing plants move to the Southern states.

"Invasion of industrial sanctity," another expression used by the critic, has probably a more definite meaning to Paterson industries than it has to Southern manufacturers. It seems that Paterson, according to the Evening News, has been beset with strikes, with the result that there is "an atmosphere of tenseness." Maybe that explains it.

PAPER INDUSTRY LOOKS SOUTHWARD

By
Wright Bryan

FROM the throbbing presses of nine Georgia newspapers there issued, on November 20, on tons of white paper another day's news for 295,000 readers. This newsprint was compounded and compressed, not of spruce from foreign countries, but of fragrant pine from Georgia's own coastal forests.

Behind a day's run in press rooms of the Atlanta Constitution, Atlanta Journal, Atlanta Georgian, Macon Telegraph, Savannah Morning News, Albany Herald, Athens Banner-Herald, Brunswick News, and Waycross Journal-Herald—three metropolitan, two medium-sized, and four small dailies—lay eight hours of gruelling test beneath the rollers of a paper mill in Ontario. There, with the same machinery and under identical conditions applying in the manufacture of newsprint from spruce, 25 tons of pine pulp from Georgia were converted into paper of the best quality which less than three weeks later emerged from the press rooms of Georgia as newspapers.

Behind the dramatic test in that Ontario paper mill lay two years or more of experimentation—and the faith of Dr. Charles Holmes Herty, a native of Milledgeville, Ga., Dr. Herty wears today the modest title, research chemist for the Georgia Department of Forestry and Geological Development, but behind him is a record of almost 40 years' scientific zeal and skill which brought him to such posts as the presidency of the American Chemical Society in 1915 and the presidency of the Synthetic Chemical Manufacturers Association in 1921. He is now devoting himself to the proposition that newsprint production from pine on a commercial scale is not only possible but economically desirable. He has directed for more than two years the semi-commercial pulp mill near Savannah, financed by the Chemical Foundation, Inc., the State of Georgia, the Industrial Committee of Savannah, and numerous citizens and corporations. Dr. Herty was recently appointed deputy administrator of the N. R. A., in charge of codes for chemical industries.

Laboratory tests by Dr. Herty showed that paper could be made from pine.

The larger question, answered in the affirmative by the November tests in paper mill and press rooms, was: "Is the process commercially feasible?"

The answer was that the Georgia pine pulp ran through the mill at high speed for eight hours without a break, though some breakage is expected in the normal course of paper manufacture. The further answer is that the newsprint output from this run went through the presses of nine Georgia newspapers with excellent results.

The cold economics of it is that Dr. Herty figures the total cost of newsprint production from pine pulp, on the basis of 150 tons daily capacity or 45,000 tons annual production, at \$19.06 a ton. The conversion cost of newsprint in Canada, estimated by John Stadler, distinguished paper mill engineer, in the March, 1933, issue of Pulp and Paper of Canada, is \$27.90 a ton.

To realize what this may mean to the South, one only needs consider that newsprint consumption of the United States each year is valued at \$140,000,000 and that two-thirds or more now comes from Canada.

You may further consider that Dr. Herty's experiments show that small pines, less than nine inches in diameter, which have been turpentine for three years and discarded by the naval stores industry and remaining in the wood as utterly useless material, are equally valuable for newsprint manufacture if the scarified portion of the trunk is discarded. This one experiment alone puts no less than 30,000,000 cords of wood located generally in southeast Georgia and northern Florida available for newsprint manufacture. It is estimated that seven and one-half million cords a year will supply needs of the United States.

Add the fact that loblolly and slash pine will produce an average annual yield of 1.5 to two cords of wood per acre, and that there are 100,000,000 acres of cut-over lands in the South not needed for agricultural purposes, and 25,000,000 acres of abandoned farmlands, and you have a picture of why the course of paper manufacture may be turned from its northward trend to the Deep South.

It so happens that the President of the United States was in Warm Springs, Georgia, when nine of the State's newspapers appeared on pine newsprint. There is little doubt, that with his interest in forestry as in the nation's re-

A Declaration of Independence From Foreign Newsprint Sources Was Sounded When Nine Georgia Newspapers Printed Their November 20 Editions on Paper, Made on a Commercial Scale, From Georgia Pines. It Holds for the South's Industrial Future as the Center for Paper Manufacturing Epoch-Making Possibilities. Here Is Offered an Opportunity for Industrial Expansion That Would Utilize American Raw Materials and Create Employment for American Workers in Supplying a Product That Is Now Largely Purchased From Other Countries.

sources of all kinds, he may be persuaded to throw the National Government behind the development of adequate newsprint supply within the boundaries of the United States.

This historical commercial test of Southern pine paper making was run in the Canadian mill of the Beaver Wood Fibre Company, a subsidiary of the Certain-teed Products Company, New York. In describing the results obtained in making newsprint from Georgia pine, sulphite pulp and groundwood, John Ball, manager of the plant, reported:

"There was no pitch at any time and the paper stuck to our first press roll 75 per cent less than it would on our regular spruce pulp. It ran without a break and 100 per cent perfect as far as the paper machine operation was concerned. It took a fairly good surface and with a little more experience a much cleaner and better sheet of paper can be obtained. It takes less steam to dry this paper than it does our regular spruce wood-pulp. The Georgia pine paper was made upon the same wire, same felts, and under identically the same conditions as we operate when on our regular newsprint. By this test you have proven that young Southern pine is in a high sense suitable for the manufacture of newsprint and it may mark the beginning of a great industrial development in the South".

INDUSTRIAL RELATIONS AND THE RECOVERY PROGRAM

By

Robert L. Lund

President,

National Association of Manufacturers,
Member N.R.A. Industrial Advisory Board

It was unnecessary and extremely unfortunate that the labor clauses were written into the Recovery Act. The effect has been to make it a labor law rather than a recovery law. The provisions of the Labor Section changed the status of labor only in that it provides no worker shall be discharged or refused employment because of membership in a union or required to join a company employee organization, and in no other respect. In well-ordered concerns, these provisions were not trespassed before the law was passed, and in themselves they effect to violent change in industrial relations.

However, selfish leaders for personal gain have used the Act as a springing board for union organization. They have misrepresented its provisions, representing to uninformed workers that the law requires union organization; that the benefits of the Act cannot be realized except by joining organized unions; and that the objectives of the Recovery program cannot be attained except through the general establishment of the closed union shop.

Argument has centered around the Merit Clause, asserting the right of the employer to hire and advance his employees on the basis of individual merit. Unfortunately, the Administration refused the inclusion of this clause in all excepting one of the Codes, lending further weight to the misrepresentations of union organizers.

In the face of statements by the Administrator and his Legal Counsel setting forth correctly the provisions of the Act, it has been thus used by misrepresentation as a means for inciting widespread and serious labor disturbances. Careful surveys by the National Association of Manufacturers and the 300 industrial organizations associated in its National Industrial Council, show that there have been, since last July, more than 1,100 strikes, involving directly almost 700,000 workers who have lost a total of over 9,500,000 working days, with a loss in wages of more than \$33,500,000. Workers engaged in supplying

raw and partly manufactured materials are not included in these totals; their number and wage loss can only be estimated but may well bring the total to over 1,000,000 men and \$50,000,000 in wages. It is of great interest and significance that the peak of the strike movement occurred in September, when 2,750,000 working days were lost and that there has been a marked improvement since.

Labor organizations have been given unfortunate and undeserved prominence in the administration of the Act. Representing less than 10 per cent of the workers in the country, they have taken to themselves at every opportunity credit for the reemployment of millions of workers under the Recovery Act who have been put at work by industry at a cost of many hundreds of millions of dollars, and without any certainty of added income to pay this vast expense. President Roosevelt estimates that 4,000,000 have been returned to their jobs. This has been industry's contribution to the Recovery Act—probably the most spectacular stream of reemployment in history.

Professional union leaders have made vicious attacks upon industries which work in friendly cooperation with their employees. An investigation by the Industrial Advisory Board of the Recovery Administration shows that the Labor relations in these plants are highly satisfactory to employees as well as employers. The wages are high; working conditions excellent; there are few controversies and those—almost invariably—amicably settled without strike or lock-out and consequent loss to the workers and to the industry.

Contrast with this the unconscionable inter-union fights, such as that which stopped work on Government buildings in Washington within a stone's throw of the building in which the Recovery Administration is housed. For weeks more than a thousand men were thrown out of employment because two trades could not agree which should put radiator screens in place. Samuel Gompers said of such jurisdictional fights—

"Unless our affiliated unions radically and soon change their course we shall at no distant day be in the midst of an internecine contest unparalleled in any era of the industrial world, aye, not even when workmen of dif-



Robert L. Lund

ferent trades were arrayed against each other behind barricades in the streets over the question of trade against trade. * * * There is scarcely an affiliated organization which is not engaged in a dispute with another organization (and in some cases with several organizations), upon the question of jurisdiction. * * * This contention for jurisdiction has grown into such proportions and is fought with such intensity as to arouse the most bitter feuds and trade wars. In many instances employers fairly inclined toward organized labor have been made innocently to suffer from causes entirely beyond their control."

Read the statement of the Police Department in New York,—that the number of policemen on continuous strike duty in Manhattan reached, early this month, the highest point on record, reducing the number of men on patrol duty to such low mark that the resources of the Department were strained to provide proper protection to the public.

It is frankly admitted that not all employers have treated their workers fairly. In many cases this has been due to destructive, competitive practices forced upon industry by the anti-trust law restrictions. Under the Recovery Act, this destructive competition is wiped away, and the Act thus has cleared the way for a consideration of workers never possible before. The record of the Steel Industry shows how the plan has worked, and bear in mind that these wage increases and shortened hours have been granted with no assured income to pay for them. Management and labor work together to produce their product for a market. If their work is well done, both prosper; if not, both suffer. Any influence which divides the employer and his employees destroys the capacity of industry to do its job well and the dividing wall which organized labor attempts to erect between management and labor, is dangerously destructive to the public welfare.



Products from all parts of the world pass through the Port of New Orleans which has 7½ miles of wharves

LATIN-AMERICAN TRADE

By
R. W. Morrison*
San Antonio, Texas

**Mexico, Central America and
a Great Continent Afford a
Logical Market for Manufac-
tured Products of the United
States Which Should Prove
Mutually Advantageous**

WITH comparatively few exceptions, the products of Latin-America are not in competition with the products of the United States. The United States is over-industrialized and Latin-America is, as a whole, under-industrialized. There is, therefore, sound practical reasons why trade between Latin-America and the United States should be mutually advantageous.

England has her Empire agreements giving preference to Empire products which, for the most part are in direct competition with the products of Latin-

*Mr. Morrison, who was a delegate to the London Economic Conference, has long been one of the outstanding business leaders and developers of the Southwest.

America. But, notwithstanding this agreement, England continues by-lateral trade agreements and other undertakings to secure additional advantages in Latin-America; and, generally speaking, each time England secures an additional advantage it works a hardship on United States trade.

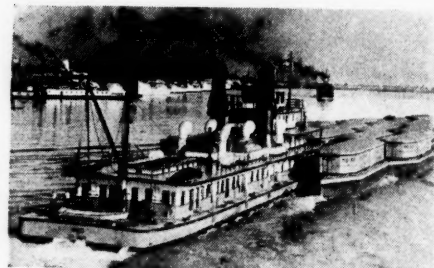
Up to a comparatively few years ago, there was a considerable volume of direct trade between the United States and Latin-America, but there was a much greater volume of trade involved in the triangular exchange through which the United States sold to Latin-America, Latin-America sold to Europe and the United States bought from Europe. This triangle was weakened by successive increases in tariffs on imports into the

Part of Port Facilities of Jacksonville, Fla.

United States until it was practically destroyed by the final tariff measure enacted by the Hoover Administration.

Europe is the natural market for many Latin-American products, but Latin-America does not offer a sufficient market for the manufactured products of her European customers. The United States did offer a logical market for sufficient of these products to permit the Europeans to satisfy their wants for Latin-American products by selling these manufactured products to the United States and the United States, in turn, sold more to Latin-America than they bought from Latin-America.

Unlimited facts and figures could be given showing the utter lack of logic in the reasoning which led to the destruction of the triangular trade, but it is not my purpose to review the past except to the extent which it will be necessary to prove the present. It might, however, be added at this point that practically every nation speaking before the plenary session at the Economic



Mississippi Barge Tow

The "Ohio", a towboat of the Mississippi Valley Barge Line, operating between Cincinnati and New Orleans. This enterprise represents an investment of private capital of \$3,500,000. Application is now being made to extend this service to Texas ports

conference in London attributed the present unsatisfactory world economic condition principally to undue restrictions of trade. This is undoubtedly the first instance in which so large a number of nations agreed upon anything and the fact they did so agree has been



Airview of Port of Galveston

Ten mile channel with a depth of 35 feet and width of 1200 feet leads to 32 piers within space of $2\frac{1}{4}$ miles—Galveston is conveniently situated to serve all Latin-American countries

given practically no attention and very little publicity.

Regardless of this general agreement as to the evils of undue trade restrictions, all European nations seem to be headed in exactly that direction. Without exception, they are nationalizing themselves to the fullest possible extent largely because of the undue trade restrictions imposed during the Hoover Administration.

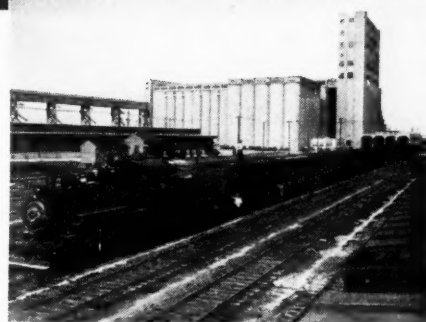
It is, of course, uneconomical for the Swiss to endeavor to grow wheat but if the United States puts prohibitive duty on their watches, then the watchmaker must abandon his trade and do something else or starve. He, accordingly, is forced to attempt to grow wheat under the most uneconomic conditions imaginable, and so it goes.

The fact which it is desired to bring out is, so long as our present trade restriction policy remains, there is no reasonable hope for increasing our trade with Europe.

To the South of us lies Mexico, Central America and a great continent. Most of their products, broadly speaking, are not in competition with our products. If a stable monetary policy could be developed in these countries, their future development is certain and whether that development is along practical lines which would result in a maximum of trade with them depends almost entirely on the sound practical business judgment used in planning the future trade relation between these countries and the United States.



Right—Trainload of lard and packinghouse products of Southwest moving through Galveston for various Latin-American countries



Sao Paulo, Capital of Brazil

New skyscrapers and mercantile buildings are being constructed in many Central and South American cities



INCREASED ACTIVITY IN KNOXVILLE AREA

By
H. D. Paine

KNOXVILLE is enjoying a speedy recovery from the past few years of depressed business conditions.

Knoxville's strategic location midway between the Atlantic Coast and the Mississippi River, and equi-distant from the Gulf of Mexico and the Great Lakes places it in the center of eastern United States. Its highways and railroads radiate North and South, East and West.

Knoxville is probably playing the most important part of any one city in the development of the Tennessee Valley, being only 25 miles from the Norris Dam now under construction. One of the large offices of the Tennessee Valley Authority is located in Knoxville with over a thousand employes in the offices and in the area with a monthly payroll of \$150,000, at this time. With the coming of the T. V. A. employes brought from all parts of the country, the majority of them bringing their families and making Knoxville their home, it has been a great help to local real estate.

One of Fleet of Super-Powered Gasoline Shovels in Operation at Norris Dam

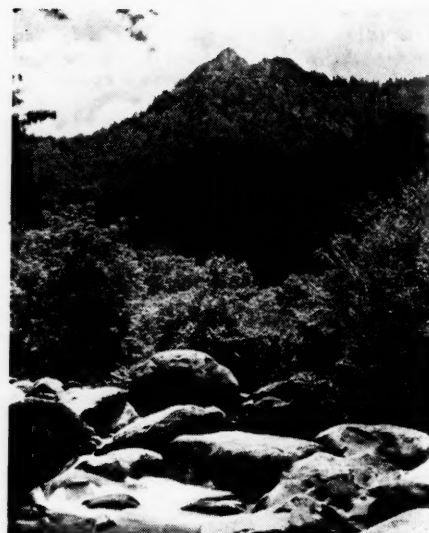


Stimulus of Purchases and Employment Resulting From the Development of the Tennessee Valley Is Reviving Business in all Lines

At present there scarcely can be found vacant rental property of average facilities both in houses and apartments. The sale of real estate however is not so rapid, but is showing considerable improvement.

Approximately \$27,000,000 all to be spent on the construction of the Norris Dam, preparations for which have been underway for some months and actual construction work having now begun. With this large construction and expenditure of large sums of money within this territory our people look to the future with much encouragement.

The Authority has greatly helped conditions by placing orders for machinery, lumber, cement, hardware, motor trucks, motor cars, steam shovels, bedding, restaurant equipment and general supplies, with local firms, in each case dividing the business well among all firms in each respective line of business. In short the T. V. A. is the big payman in this sec-



Unsurpassed Scenic Beauty in Region of Knoxville

tion having made purchases totaling \$1,500,000 in the past six weeks.

The above figures on payroll and purchases do not include that of the W. W. Boxley Company of Roanoke, Va., which company was awarded the contract for building the heavy duty highway from Coal Creek to the Norris Dam for the T. V. A. This concern placed an order with the Volunteer Portland Cement Company of Knoxville for 22,000 barrels, or 110 carloads, of cement for this road construction.

In co-ordination with the T. V. A. the Civil Works Administration contemplates centering its offices in Knoxville. This project will require new quarters for 400 employes. Just how this C. W. A. will work in co-ordination with the T. V. A. has not been learned, but apparently it will greatly increase the scope of the Tennessee Valley Authority, probably doubling its activities.

The University of Tennessee, another of Knoxville's big industries if we might call it that, has received approval of a loan and grant of \$493,443 from the Public Works Administration for the construction of new buildings on the University Campus. Plans have already been completed and bids are to be opened as soon as the money becomes available. This construction will consist of a new Administration and Biology Building and several buildings on the University Experimental Farm.

The past few months have seen the establishment of several new business firms. The Ragland Potter Company, one of the largest wholesale grocery houses in the State, has established a warehouse for distribution over East Tennessee. The Tennessee Valley Brewing Company recently leased a six-story concrete structure, installing all new equipment and will soon be in operation. The East Tennessee Packing Company has built a sizeable plant addition to take

care of increased business. The Goodall Manufacturing Company, makers of Palm Beach suits, which have had a plant in Knoxville for the past three years have recently taken a 20-acre tract of land and have plans drawn for a half-million dollar plant, covering four acres. The Growers Fruit Produce Company have opened for business with warehouse and cold storage plant specializing in high grade imported fruits.

Continuing with a few facts which make up our business barometer the Tennessee Public Service Company reports a total consumption for September of 6,118,000 kilowatt hours showing an increase of 308,000 kilowatt hours over the same month of last year, 275,000 kilowatt hours of the total was due to increase in industrial plant usage.

Southern Bell Telephone Company show steady increases in telephone connections for the past few months, the first actual increases that they have had in some years.

Knoxville's textile and clothing mills now are giving employment to more than 7,500 persons, the largest number on their payroll since 1929. The total payrolls of these mills under the textile and clothing mill codes have increased approximately 25 per cent, most of them working three shifts.

The last statement of the Hamilton National Bank of Knoxville showed total deposits of \$12,135,761. This bank's deposits have increased \$158,000 in 25 days.

The Great Smoky Mountains National



Mess Hall Near Norris Dam

Under construction by T. V. A. Equipped with all modern facilities to serve 500 persons at one time

Park, of which Knoxville is the Western and Northern Gateway, lies just 30 miles southeast of our city, connected by a new memorial highway and bridge. New roads and trails are being built within the Park. This work being done largely by the Government C. C. C. Camps, there being 20 of these camps within the Park area with a total of 4,000 men employed. New C. C. C. Camps are being set up in the Norris Dam area.

This beautiful playground is without a doubt one of the greatest assets of Knoxville and East Tennessee. Mr. Cammerer, National Parks Director, issued a report on visitors to the National Parks for the past season in which he shows that 372,000 people visited the Great

Smoky Mountains National Park this year, leading all other parks. It is estimated that this number will be more than doubled next year, bringing a wealth of tourists through Knoxville.

These high-lights and others that could be mentioned serve to definitely prove the assertion that the upturn in business locally has assuredly begun. Passing from a state of "No business and no hope" as one rank pessimist put it, the status is now "Some business and plenty of hope," and the local attitude is undoubtedly a feeling that these hopes will soon be transformed into a steady increasing business.

Building Highway to Norris Dam

Crew and shovels of W. W. Boxley Co., of Roanoke, Va., constructing heavy duty reinforced concrete road between Coal Creek and Norris Dam site



FASTER AND MORE DEPENDABLE AIR TRANSPORT SERVICE

By
K. A. Kennedy
General Traffic Manager
United Air Lines*

THE fact that air transportation, the movement of passengers and cargo by air made substantial gains and attained its highest patronage during the height of a depression is proof that air transportation has definitely established itself as an essential unit of transportation and communication.

The South is particularly fortunate in having very high type speedy airplane service, including overnight flights from New York, Philadelphia, Baltimore, Washington, Richmond to Atlanta and overnight return service from points in the far South to the North Atlantic. The first "sleeping" plane service was started in October on the Atlanta-New York route. It is possible to ship and travel from New York and points just mentioned to Florida between breakfast and the evening meal. Miami connects with Cuba and Central America; the South east is connected with the Southwest and both sections with the North.

To date 75 per cent of the travel is by business executives, and they use the planes because of the time savings. Texas is only a daylight flight from New York, and north Atlantic seaboard points.

Seattle and San Diego, near the Canadian and Mexican boundaries, are only nine hours apart. Now it requires only 20 hours to fly from coast to coast, and mail, express and passengers are being moved across with the loss of only one-half of one business day.

A Chicago manufacturer placed two shipments in the "outgoing room" at the close of the business day; one was marked for delivery to a Chicago retailer, the other to a San Francisco retailer. Both were delivered at the opening of the business day, as the California ship-ment went on the overnight passenger-express plane to California. When a press in a printing plant broke down recently in Dallas, a wire was sent to Cleveland, Ohio, for a spare part. It left Cleveland at nine o'clock at night, and was delivered in Dallas before the plant started operations in the morning. The press, instead of being tied up for three days, as would have resulted if surface transportation had been used, was out of commission less than one-half of one business day, saving time, money and worry.

A Washington, D. C. business concern, with branch offices in many parts of the West, had to make a quick survey of the situation after the bank moratorium. An executive of this company left Washington af-

ter breakfast, arrived in Chicago for lunch, and an afternoon conference, left at the close of the business day and arrived in Los Angeles at the breakfast hour. He spent the forenoon there, and left at noon for a two hour flight to San Francisco. Seattle, the next stop, was but a six hour flight. A twenty-four hour train trip from Seattle to Salt Lake City was reduced to seven hours by air. A five hour trip took him from Salt Lake to Omaha. After a meeting there he flew to Chicago in 2½ hours. When he was back in Washington he had been gone only eight days and had received a first hand picture of conditions as far away as 3,000 miles. The cost of his trip, considering the hotel bill saved, was approximately what surface transportation would have been.

Another business man "Traveled from Denver through Kansas City, Chicago, Cleveland, New York City, Washington, Atlanta, Birmingham, New Orleans, Dallas, St. Louis, Kansas City, Denver, Cheyenne, Salt Lake City, Boise, Portland, Seattle, Los Angeles, El Paso, Albuquerque, Denver, Omaha, St. Paul,

*United Air Lines is rated as the largest air transport company in the world, and in October flew its 50,000,000th mile on its Coast-to-Coast and other routes.



Air Travel Now Has All the Comforts of a Pullman Car

This is a view of one of United Air Lines' three-mile-a-minute transports showing a stewardess who serves lunches and adds to the comfort of the trip.



Night Operation of Large Airplanes Has Made Overnight Neighbors of Cities of the South

Planes leaving New York, Baltimore, Washington and Richmond at night reach Atlanta, Georgia, in the morning; while passengers leaving Washington in the afternoon reach points as distant as Salt Lake City for breakfast.

Chicago, Cleveland and returning to New York, a distance of approximately 8,000 miles in about 72 hours flying time, as against 300 hours travel time by surface methods. The cost was within \$40 of ground travel when all costs were considered."

Each time there has been a speeding up of transportation and communication in the United States, there have been changes in manufacturing, merchandising and sales methods, and the airplane, just as the automobile, is already beginning to work changes in methods of distribution. This is an age of small stocks and quick turnovers, and the ability of retailers and jobbers to obtain replacements almost overnight from points as distinct as 2,000 miles, is being reflected in their carrying of smaller stocks, which reduces their capital investment.

During the past year there has been a substantial growth in air express. United Air Lines and other major companies are affiliated with the Air Express Division of the Railway Express Agency, insuring not only an air express, but a combination airrail service, until now air express can be consigned and received as easily as other express. Due to a uniform bill of lading, air express now offers this service:

Door-to-door pick-up and special delivery in principal cities at no extra cost.

Duplicate system of receipts to shipper and from consignee insuring safety.

Shipments accepted prepaid, collect, or C. O. D. Prompt remittances.

Practically all types of merchandise accepted up to \$5,000 in value, 200 lbs. in weight, and 106 inches in length and

girth. Larger and heavier shipments can be forwarded by arrangement.

\$50 free liability for 100 lbs. or less. Additional liability accepted at 15c per \$100.

Prompt notice to shipper and consignee if shipment cannot be delivered.

It is noteworthy that faster and more dependable service, and more comfort on the passenger side of air travel has come simultaneously with a sharp reduction in the cost to the public. The present passenger fares are now approximately one-half of what they were three years ago, and air express rates are only one-third of what they were three years ago.

The summer of 1933 marked the greatest increase in speed in the history of air transportation. From 1925 to 1927, typical cruising speed of commercial airplanes was around 100 m.p.h. By 1932 this had increased to approximately 115 m.p.h. This winter there are in service multi-motored passenger transports capable of a cruising speed as high as 165 miles an hour. It has been demonstrated that each time there has been a speeding up of air travel, traffic has increased, and the average ride has been lengthened. Likewise, speedier planes have brought an increase in night flying, which affords a maximum of time saving, when measured in terms of business hours. Therefore, the airplane companies have been concentrating on speedier equipment.

The speed of transport planes depends chiefly on type of design and construction, efficiency of the power plant, and the degree to which comfort features, which add weight to the plane and influence its design, are considered. The public, while it wants speed and more speed, is not satisfied with riding in cramped space or without comfort fea-

tures. In the new Boeing high speed, multi-motored transports, the engineers allowed 170 pounds for each passenger, and then added 107 pounds allowance per passenger.

Another constructive side of the picture is the progress made to increase the dependability of air transportation. The operators have benefitted immeasurably from the participation of the Aeronautical Branch of the Department of Commerce and the United States Weather Bureau. High standards of equipment and operating practices were formulated and the responsible operators are anxious to adhere to these standards. The element of uncertainty has been substantially minimized through development and adoption of aids to aviation, weather observing and reporting, airway developing and lighting, and radio telephone. These are some of the tangible scientific achievements accomplished during a short period of development, to which can be attributed much of the present efficient operations.

Air transportation has moved from the stage of development of equipment and facilities to a period in which traffic growth must be a paramount factor if air transportation is to justify itself. When the government retired from the operation of air mail planes, and private contractors were awarded routes on the basis of the lowest bids, practically the only income was from the air mail. But in recent years, the operators have developed new sources of income—passenger and express business.

American commerce and industry are making greater use of air transportation because they recognize the savings to be effected in traveling, corresponding and shipping by air.

One of the Hangars at Love Field, Dallas, Texas

Courtesy The Austin Company, Airport Engineers and Builders



\$75,578,000 CONSTRUCTION CONTRACTS

SURPASSING the October total by nearly 40 per cent, contracts awarded for construction, building and engineering projects in the sixteen Southern States during November had a total valuation of \$75,578,000, the highest monthly total since July, 1930, as reported by the MANUFACTURERS RECORD DAILY CONSTRUCTION BULLETIN.

The new record established last month is directly in line with the trends pointed out in these columns, based on the all-time high total of \$178,709,000 of contracts to be awarded, reported in September. Moreover, projects initially announced as "planned and proposed," included in October reports, called for an expenditure of \$113,906,000, the second high monthly total for this year.

\$25,576,000 In Public Building Awards

Planning last month gave way to action. There was a notable increase in awards for public buildings, many of which have been in the "planned" stage for the past two years. Contracts let for city, county, Government and State buildings in November totaled \$25,576,000, and awards for school buildings amounted to \$347,000, bringing the total valuation of awards for public buildings to \$25,923,000, and placing this classification in the premier position.

\$23,973,000 Contracts Let For Roads And Bridges

Awards for road, street, paving, bridge and viaduct construction last month aggregated \$23,973,000, the highest monthly figure for this year. The total compares with \$17,762,000 representing awards of a like character in October.

Industrial And Engineering Awards At High Level

Contracts let for industrial and engineering projects during November are only slightly less than the road and bridge figure, aggregating \$23,895,000.

Contracts were awarded last month for levees, revetments, dikes and similar river control works to cost \$10,673,000, while dredging projects, including rivers and harbors work, inland waterways and port improvements generally, let to contract aggregated \$5,099,000. Contracts awarded for these related classes of work accounted for \$15,772,000. During October \$22,966,000 in like awards

November Total Awards In South Highest Since July, 1930. Fourth Consecutive Month to Show Gain This Year.

was reported, resulting from the speeding up of flood control work.

Diversity Of Small Industrial Enterprises Features November Activity

Awards for industrial enterprises accounted for \$4,745,000 of last month's total. The improvement of established distilleries and breweries and the erection of new plants feature Southern industrial activity. The building of new oil refineries, gasoline extraction plants and bulk storage facilities is under way in volume. Rayon producing plants are going forward with major expansion programs, involving the installation of highly efficient, newly developed machinery. The textile industry is centering its attention on mill renovation, rearrangement of machinery layouts, the installation of steam-electric power plants, and the replacement of obsolete machinery with high speed units.

Sewers And Waterworks Awards Gain

Awards for sewers, drainage and waterworks during November amounted to \$2,800,000, the new high figure being directly in line with the unusually large totals in recent months representing projected work of that character. That awards of this kind will figure prominently in coming months' totals is indicated by the total of \$24,576,000, of contracts to be awarded for sewers and waterworks projects, reported during November.

General Building Contracts Continue To Increase

General building awards of \$1,787,000 in November showed a slight increase over awards of \$1,765,000 for like building work reported in October. There was a marked recession in residential construction, contracts running to only \$667,000, as compared with dwelling awards totaling \$1,092,000 for October. All other divisions of general building showed increases however. Store build-

ing awards were \$355,000 as compared with \$315,000 for October. Contracts let for new church building and additions called for an outlay of \$227,000 as compared with \$137,000 in October. Apartment and hotel construction awards last month were \$418,000, as compared with \$155,000 in the preceding month.

Substantial Construction And Building Program Under Way

Considering the trends indicated in Southern construction activities, based on actual lettings and proposed work reported in October and November, it is apparent that in 1934, that a well rounded building and construction program will be in progress in the Southern States. Every indication points now to a continuation of construction and engineering work in substantial volume throughout the remainder of this year and through the first half of 1934. While public building and construction work predominate, private construction is gaining and industrial expansion is in fair volume. Manufacturers are taking advantage of the comparatively low prices for material and equipment to go forward with plant rehabilitation.

The unusually large fall-winter program in the South, where work can go forward virtually the year round, is creating a demand throughout the country for machinery, materials and supplies in large variety, providing work for many industrial plants. Skilled and unskilled workmen are again on payrolls and engineers and architects, long idle are finding the demand for their services increasing as private and public work gains momentum.

CONSTRUCTION ACTIVITY FOR NOVEMBER, 1933

	Contracts Awarded	Contracts to be Awarded
General Building		
Apartments and Hotels	\$418,000	\$150,000
Association and Fratern- al	40,000	1,105,000
Bank and Office	80,000	225,000
Churches	227,000	315,000
Dwellings	667,000	3,980,000
Stores	355,000	540,000
	\$1,787,000	\$6,315,000
Public Buildings		
City, County, Govern- ment and State	\$25,576,000	\$22,930,000
Schools	347,000	2,265,000
	\$25,923,000	\$25,195,000
Roads, Streets and Pav- ing	\$23,973,000	\$6,003,000
Industrial and Engi- neering Projects		
Dredging	\$5,099,000	\$3,076,000
Filling Stations, Ga- rages, etc.	323,000	220,000
Industrial Plants	4,745,000	17,452,000
Levees, Revetments, Dikes, etc.	10,673,000	4,050,000
Warehouses	255,000
Sewers, Drainage and Waterworks	2,800,000	24,576,000
	\$23,895,000	\$49,374,000
Total	\$75,578,000	\$86,887,000

TYPING BY WIRE

TWO-WAY, NATION-WIDE COMMUNICATION



TELETYPEWRITER EXCHANGE SERVICE IS DIRECT, SPEEDY AND ACCURATE

THROUGHOUT the country, business concerns are finding Teletypewriter Exchange Service an indispensable, time-saving and cost-cutting aid. Orders, inquiries, sales reports, shipping instructions, statistical data, executive matters can be transmitted—promptly, directly, and at moderate cost. Like this:

A business concern types on its teletypewriter the call number of the teletypewriter with which it wishes to communicate. The latter machine may be in another branch of the same company, or in the office, factory or warehouse of some other concern . . . it may be in the same city or on the opposite side of the continent.

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“teletypewriter central.” As the message is typed on the first machine, it is simultaneously reproduced, letter for letter, on the teletypewriter at the distant point.

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IRON, STEEL AND METAL MARKET

THE month of November closed with steel production running at approximately 28 per cent of capacity. In the last week of the month scrap prices rose and the outlook generally was brighter. In fact, the prospects for increased business appear better than for some months. A number of sizable orders were placed during November.

The automobile schedule could hardly be said to have met expectations, although the output for November was 65,000 units, and December output is estimated to reach 125,000 cars, which is considerably higher than was anticipated earlier in the month.

Structural Steel

The U. S. Steel Corporation's Pacific Coast subsidiary, the Columbia Steel Co., received a 9000-ton contract for approach spans for the Golden Gate bridge at San Francisco. The American Bridge Co. booked orders for 6800 tons of shapes and piling for Canton, Mo., and 1500 tons for Tranpaleau, Wis.

In the structural industry, the Virginia Bridge & Iron Co. secured contracts for 3000 tons for buildings for the Tennessee-Eastman Corporation at Kingsport, Tenn., and 1200 tons for hurricane gages at Lake Okeechobee, Fla.

The Taylor-Fichter Steel Construction Co. was the low bidder on 12,000 tons for towers for the Tri-Boro bridge, New York, and the Harris Structural Steel Co. was low bidder on 8000 tons for the West Side elevated structure, New York.

In addition to the above, inquiries for nearly 20,000 tons of structural steel have come from various sections—from New York to California—including 1600 tons for a fertilizer plant in Louisiana, 1300 tons for a highway bridge in Texas, 1000 tons for work at Barksdale Field, Shreveport, La., and 1000 tons for a bridge at Norfolk, Va.

Railroad Order Prospects

The rail orders in prospect will contribute materially to increased confidence. Eastern lines that are figuring on rails, track accessories, steel wheels, bars, plates and sheets, include the Pennsylvania Railroad, Seaboard Air Line, Western Maryland and Atlantic Coast Line among others.

The Pennsylvania is asking for delivery throughout 1934. Bids have been asked also by the Pennsylvania Rail-

road on 4500 tons of shapes and heavy sheets for automobile cars to be built by the road.

The Norfolk & Western recently closed an order for 17,500 tons and among the Western roads, the Burlington has ordered 25,000 tons and the Northern Pacific 6500 tons.

Advance in Price of Cast Iron Pipe

Cast iron pressure pipe prices were advanced \$1.00 a ton at Birmingham.

Recent additions to centrifugal pipe machinery and other improvements have given foundries in Birmingham greater capacity for pipe making than ever before.

Sentiment in pipe circles indicates that the upward movement will gather momentum as Southern pipe is being used extensively in the far West and Southwest, where pipe laying is possible the year round. Several lettings of considerable size are in prospect and government financed projects should help in increasing demand.

Pig Iron Demand Better

Pig iron manufacturers have observed a better demand coming from pipe makers. The Birmingham market for pig iron continues at \$13.50 a ton on No. 2 foundry, f.o.b., and there is no apparent prospect of an advance for the remainder of the year.

Road Work to Stimulate Steel Demand

With the large amount of road work under way and in prospect, it is inevitable that a considerable increase in orders may be experienced by steel manufacturers from Southern points, because of marked activity on the part of the Government and States in carrying out an extensive program of road building. It is estimated that the South will spend as much as \$400,000,000 counting the sums allotted by Government and local appropriations.

Extend Steel Code

A notable feature of the months news was the request of the American Iron & Steel Institute to continue the operating code under the N.R.A. for another six months. It was thought that the steel industry would be one of the most difficult to adopt itself to code requirements, but the resolution of the American Iron & Steel Institute, which is the code authority for the industry, stated "its general satisfaction with the operations of the code in its effects on the industry

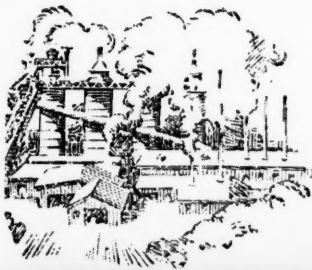
and request that the trial period be extended to May 31, 1934, to the end that sufficient time may be given more fully to demonstrate that the provisions of the code will effectuate the purposes of title I of the National Recovery Act."

According to an N.R.A. news release, the analysis of the complete figures, which was made from a compilation of figures from 213 out of 237 companies in the steel industry, there had been an increase of 32.1 per cent in wages and an increase of 28.3 per cent in employment up to October 14 when the industry was operating at 44 per cent capacity. The N.R.A. says "although the code provides that the 8-hour day shall not become mandatory until the industry shall be working at 60 per cent capacity, after November 1, 1933, nevertheless, in order to comply with the wishes of the N.R.A., and in spite of the heavy financial burden occasioned thereby, the industry has eliminated the 10-hour day in favor of the 8-hour day."

William J. Filbert to Head Finance Committee of Steel Corporation

Myron C. Taylor, head of the U. S. Steel Corporation, announced that he had arranged to transfer some of his duties to other executives. He will retire as Chairman of the Corporation's Finance Committee, but will continue as Chairman of the Board of Directors and Chief Executive officer of the Corporation. Effective January 1, William J. Filbert will succeed him as Chairman of the Finance Committee. It is reported that this is a rounding out of plans conceived as far back as 1927, which included many of the things already accomplished, such as revamping the physical properties in which unprofitable operations were abandoned and more profitably located mills rehabilitated; furthering various changes in the official personnel, and sponsoring a revision of the capital structure which involved the redemption of \$340,000,000 of the Corporation bonds.

The Tennessee Coal, Iron & Railroad Co., through Mr. Robert Gregg, the newly elected President, announced that the resumption of various plants of the company would mean the employment of 2600 additional men before the middle of December. Operations are being resumed at the rail mill, three blast furnaces, three ore mines, one coal mine, five open hearth furnaces and the blooming mill of the Ensley plant.



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DETROIT, MICH. - General Motors Building
HOUSTON, TEX. - Petroleum Building
NEW YORK, N. Y. - 71 Broadway

PHILADELPHIA, PA. - Widener Building
PITTSBURGH, PA. - Frick Building
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Pacific Coast Distributors—Columbia Steel Company, San Francisco, California.

Export Distributors—United States Steel Products Company, New York, N. Y.

HIGHWAY LEGISLATION

By

Roy F. Britton

Director, National Highway Users Conference

EVERY one in America has a direct, personal interest in commercial motor transportation. The welfare of every man even remotely connected with the growing of cotton, for example,—as well as the women and children dependent on him for support—is affected by the fact disclosed in a recent survey by the American Cotton Cooperative Association that the trucks last year saved the cotton growers in Texas alone more than \$6,000,000 in transportation costs. Similar savings in almost every industry are due entirely to the development of modern highway transportation.

The diet of the nation has been revolutionized by the motor truck. "Out-of-season" fruits and vegetables are no longer rare luxuries for the fortunate few. Good roads and cheap, efficient motor transportation bring health-giving milk to your children in the cities 24 hours earlier than it was brought with older methods. America's very health has been changed by the truck.

It would take volumes to tell the detailed story of the many benefits and economies which all of us reap from this modern form of transportation, and that is not the purpose of this article. But with even this sketchy mental picture before us, does it not seem strange that there is such a general lack of understanding of what is happening to us in every legislative session—of the unceasing efforts to hamstring this new and vital agency in our American March of Progress?

In 1933, diversions of highway funds to purposes other than the construction and maintenance of roads have far surpassed the diversions in any previous years. Motorists who permit themselves to be taxed in special taxes and fees more than one thousand million dollars per year are passively watching some State law-makers reach into this special fund and take from it literally hundreds of millions of dollars for other purposes than that for which it is raised. In private business this would be called misappropriation of funds. Nevertheless, we have submitted to these practices with only very mild protests. We do not realize what is happening to us.

Another manner in which the entire American public is being imposed upon with no showing of resentment is in the constantly increasing regulations and restrictions which are being placed on commercial motor transportation by State legislative enactment. Practically every State legislative session in recent years has witnessed a flood of bills introduced ostensibly for the purpose of protecting the taxpayers, but which benefit competing forms of transportation rather than serve the public and the taxpayers.

Out of the hundreds of bills proposed intended to handicap motor transportation, let us look at a few specific examples of those which were passed in the last year;

In Tennessee the old truck regulatory law was repealed and a new law was passed placing all common and contract carriers under the jurisdiction of the Railroad and Public Utilities Commission. This Commission is given broad powers of regulation including the right to supervise service, rates, fares and charges. It may be mentioned in passing that reports to the National Highway Users Conference indicate that a number of State legislators in Tennessee were elected on an anti-truck platform. Undoubtedly it is safe to assume that this new law in Tennessee will result in higher transportation costs for the people of that State and in greatly increased "red tape" and expense for the operators of commercial motor vehicles. The old law fixed mileage fees for "for-hire" trucks ranging from one-half cent to five cents per mile in addition to registration fees. The new law differentiates between common and contract carriers, charging both the regular registration fee, but fixing mileage fees of one-half cent and one cent per mile for common carriers and requiring a permit fee of \$25 per vehicle for contract carriers. Both common and contract carriers must pay in addition an annual inspection fee of \$10 per ton carrying capacity under the new law.

Arkansas has given the power to regulate motor vehicles to the Arkansas Corporation Commission. This Commission has inaugurated rules and regulations governing all classes of "for-hire" carriers, thereby bringing about much more complete regulation than was had formerly without the necessity of having a new regulatory law enacted.

In many of the States the trend in the past year has been toward a reduction

of registration fees on privately operated motor vehicles; but the opposite has largely been true with respect to commercial motor vehicles. In most cases where a change was made the "for-hire" vehicles will now have to pay considerably greater fees.

In Maryland an entirely new system has been inaugurated in which fees on "for-hire" vehicles will run from \$30 to \$260 per vehicle for two-axle vehicles equipped with pneumatic tires, and up to \$500 for three-axle vehicles. Vehicles with solid tires will be charged as high as \$1,000 for registration fees in some instances. Trailers and semi-trailers must pay correspondingly high fees also, dependent upon their shipping weight, the number of axles and the type of tires.

In Oklahoma a mileage tax law was enacted ranging from four to ten mills per mile dependent upon net weight. This may mean a reduction in the fees for lighter vehicles, but it appears that it will result in a very material increase in fees for heavier types of trucks which travel the normal mileage.

West Virginia, in a special Session held last summer, inaugurated a complicated classification of vehicles and fixed fees ranging as high as \$540 per vehicle with pneumatic tires and \$810 for those equipped with solid tires. In addition to these high fees carriers must pay one-eighth cent per capacity ton-mile plus one and one-half per cent of the gross income derived from the operation, and one and one-half per cent of the net income derived from business done wholly within the State.

Only two of the Southern States increased the permissible length of single units. These were Arkansas and South Carolina, in each of which the increase was from 33 feet to 35 feet. In Tennessee, on the other hand, the permissible length of a single unit was reduced from 35 feet to 27 feet. Arkansas, South Carolina and Tennessee reduced the length of semi-trailers, in each instance to 35 feet. Arkansas and Oklahoma reduced the length of combinations, in each instance to a length of 45 feet. South Carolina, in addition to prohibiting the use of full trailers, reduced the permissible weight on any single unit vehicle from 25,000 lbs. to 20,000 lbs. and will permit on tractor-semi-trailers only 20,000 lbs. gross weight, whereas heretofore these units were given additional weight because of multiple axles. In Tennessee permissible gross weight on any single unit was reduced by 2,000 lbs. and any combination of vehicles used

(Continued on page 44)

6 MACHINES

BUT ONLY **ONE** TO BUY!

- One machine to do the work of six—That's the kind of convertibility you get when you buy an Austin "Badger."

As the biggest little shovel on the market, the "Badger" features greater dipper capacity and from one to two feet more dumping height or

radius. In construction 3 times as many roller bearings are used. In portability the features are: 15 minutes to load and unload on low cost wheel mounts—transportation to the job at 25 miles an hour.

And, at the extra cost of booms and attachments only, the "Badger" does a great job as a shovel, clam shell, back filler, trench hoe, drag line, or crane. Write for a bulletin explaining this amazing convertibility.

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EQUIPMENT

NEW AND IMPROVED

Constant Level Oil Control

The Lunkenheimer Company, Cincinnati, Ohio, has developed the "Alvor" Constant Level Oil Control, designed to automatically maintain a constant oil level in ring oiled bearings or anti-friction bearings suitable for oil bath lubrication, and to insure against failure of oil supply. The device operates on the liquid seal principle, feeding only when the oil level in the bearing drops below the end of the shank, breaking the liquid seal and permitting air to enter the bottle. It will not feed as long as the oil level is at or above the beveled end of the shank.

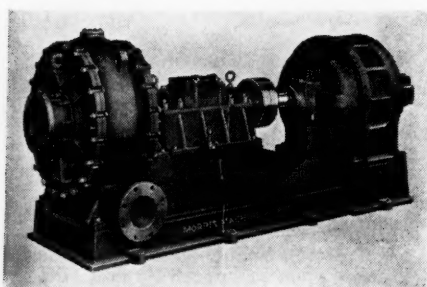
New Heavy-Duty Dredging Pump

The Morris Machine Works, Baldwinville, N. Y., has added to its line of centrifugal pumps a design which has been specially developed for handling extremely abrasive mixtures against high heads. In this new design, known as the Type F Heavy Duty Dredging Pump, all parts subject to wear, such as the casing, impeller, disc, liners, sealing and throat rings, are made of semi-steel, manganese steel, or special Morris alloys depending on the severity of the service. The casing and impeller are of large diameter so that the pump will run at comparatively low speed even when operating against high head.

The selected wear-resistant metals and low speed operation of these pumps are both important factors in reducing wear and resulting maintenance expense. In addition, the design includes several special features that help to maintain the original high efficiency of the pump and to minimize operating and upkeep costs. The position of the impeller can be adjusted from the outside of the pump to take up wear on the suction sealing ring and prevent internal leakage.

These pumps are ideally suited for

Type F Dredging Pump



handling sand and gravel or for general dredging service when the material is to be delivered at a high elevation or through long pipe lines. They are also adapted to special services, such as in ash disposal systems, coal handling plants, and process work where coarse or heavy abrasive mixtures are to be handled such as in mines, metal refining plants, chemical plants, etc. The pumps are built in a complete range of sizes from 4 in. to 15 in. discharge, for total heads up to 150 ft., and for operation by electric motor or belt.

Adjustable-Timing Contactor

Designed and built for plant operation, a new timing contactor has been announced by the Automotive Temperature Control Company, Philadelphia, Pa. The unit is sturdy in construction, has a minimum of parts, will operate in any position without the need of leveling and is unaffected by vibration, it is said, yet the elapsed time may be set to a split scale division for any range desired within the dial selected. Power is obtained from a reversing synchronous motor and the contact arm moves alternately clockwise and counter-clockwise within the time limit set, making a ten ampere 100 V. A. C. load circuit for an adjustable time at either extreme of its travel. Units of this design are also available to be actuated from a momentary contact switch.

Oil Engine for Shovel and Dragline

The Northwest Oil Engine for shovel, crane and dragline service, made by the Northwest Engineering Company, Chicago, is of the heavy duty type and operates at slow speeds. There are no moving parts other than those found on a gasoline engine, while pressures do not exceed those of the gasoline engine, it is said, and the unit may be started by cranking. Operating principles are similar to those of the gasoline engine, the oil engine having an ignition system and carburetor. Special combustion cylinders and careful manifolding permit heavy oils to reach the cylinder in practically the same condition as does gasoline, it is claimed, the fuel conversion system performing the functions of metering the fuel accurately to the engine and atomizing it finely into the air stream distributing it accurately to each of the four cylinders, and preparing for complete, clean combustion.

Continental-Built Wooldridge Trailbuilders

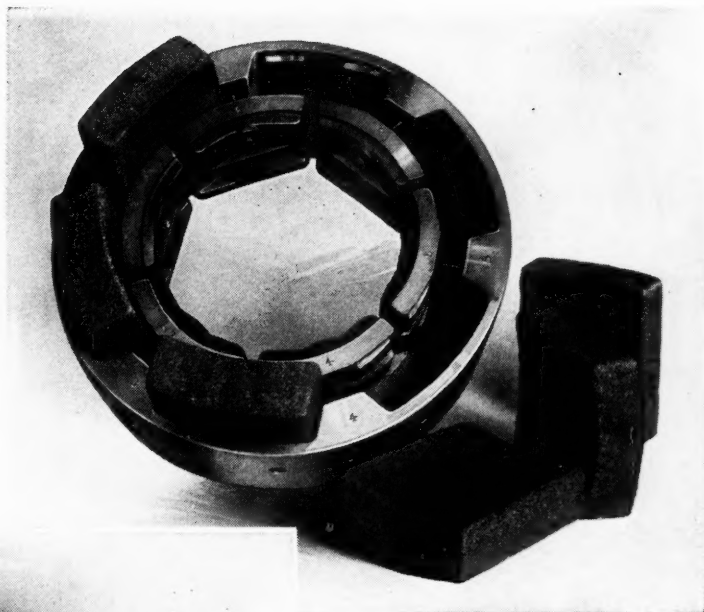
The Continental Roll and Steel Foundry Company, Chicago, operating steel plants at East Chicago, Ind., Wheeling, W. Va., and Pittsburgh, Pa., is now manufacturing Wooldridge Trailbuilders and Bulldozers, available for operation with Allis-Chalmers, Caterpillar and Cletrac tractors and with McCormick-Deering TracTractors. The Continental company has established an Industrial Equipment Division for merchandising heavy tractor-operating equipment and has opened sales offices at 332 South Michigan avenue, Chicago, with R. W. Moon as manager. Continental-built equipment combines the new Dynamic steel with high quality welded construction characteristic of Wooldridge machines, which have long been popular in National Parks, Forestry Service, and Western lumber camps. The Wooldridge Hydraulic Trailbuilder has established records of low cost work, it is claimed, due in great measure to the ease of maneuvering the blade.

Recording and Dial Thermometers

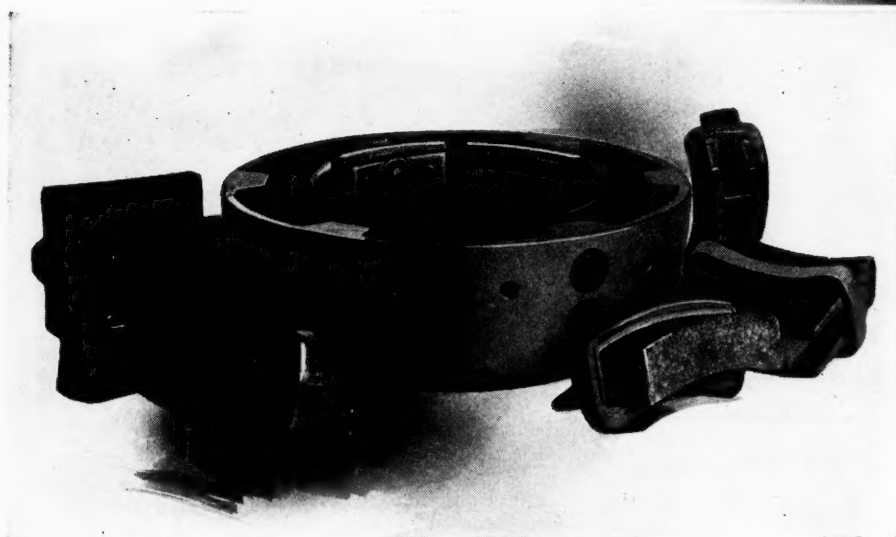
Calling attention to their new line of Marsh Recording Thermometers and Marsh Industrial Dial Thermometers, the Jas. P. Marsh Corporation, Chicago, manufacturers of the instruments, describes the Marsh-Dickson Round Form Recording Thermometer as an "accurate, sensitive instrument suitable for general industrial application." These instruments are made in two general type—Nos. 59-GF gas filled instrument and No. 59-VT vapor tension instrument. The No. 59-GF type is suitable for temperature applications up to 1000 degrees Fahrenheit or equivalent Centigrade, while the 59-VT type is suitable for application to steam and hot water temperatures where the operating range is not more than 30 per cent of the total scale range.

Marsh-Dickson Dial Thermometers are also made in two types—57 and 58—providing a means for "convenient and accurate reading of temperatures either at the point of temperature or at remote places." Type 57, a vapor extension thermometer, is suitable for applications to temperatures below 500 degrees Fahrenheit or equivalent Centigrade, and type 58, a gas filled instrument, to temperatures up to 800 degrees.

for INCREASED PRODUCTION—
IMPROVED FINISH—
LOWER COSTS—
ON SURFACE GRINDING—THE
“CARBORUNDUM”
SEGMENT CHUCK AND
REG. U. S. PAT. OFF.
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ALOXITE BRAND
SEGMENTS



A 6-Segment Chuck



Showing Segments Fitted with Adapters

THE chuck holds the segments mechanically—holds them safely—securely—they are locked into place by a series of clamps provided with even bearing rocker shoes.

There is no cracking or chipping of segments.

The chuck is of heavy sturdy construction—a real precision tool designed for production work.

Adapters are provided for use with segments cutting down materially the loss in stub ends.

The “Carborundum” Chuck is designed for Pratt and Whitney and Blanchard Vertical Surface Grinders.

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THE DAYS AHEAD

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Do not permit present confusion to cause loss of faith in the great future ahead of us.

Baltimore Commercial Bank

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FINANCIAL NEWS

Christmas Savings

Savings of Christmas Club members in the South this year will amount to more than \$46,000,000. It is estimated that of the total distribution by the banks of the South of Christmas Savings funds, approximately \$19,500,000 will be spent for Christmas purchases and of the remainder about \$12,000,000 will be used for permanent savings and investment, \$3,500,000 for year end commitments, \$5,500,000 for taxes, \$2,300,000 for mortgage amortization and interest, \$2,300,000 for insurance premiums, and over \$900,000 for education, travel and charity.

Increasing Farm Loans

A total of more than \$100,000,000 of farm mortgage loans have been granted by the Farm Credit Administration between May 27 and November 24, Governor Myers recently announced. This includes first mortgage loans made by the land banks and first or second mortgage loans of the Farm Credit Administration, which were handled through land banks. Compared with the year 1932, when the total was \$27,569,800, the tremendous increase in loans will be noted.

Federal Deficits

The National Industrial Conference Board calls attention to the fact that the Federal deficit, or the difference between ordinary Federal receipts and expenditures, accumulating since January 1931, reached a total of \$7,589,000,000 at the end of October.

This represents an accumulation of deficits in the last three fiscal years and in the first four months of the current year. The deficit reached in the first four months of the current fiscal year of \$464,000,000, was \$524,000,000 less than the deficit in the corresponding period of last year.

Aside from expenditures classed as emergency, which totaled \$399,000,000 in this period, receipts and expenditures nearly balanced.

Deposit Guarantee

Examination of State non-member banks to make them eligible for deposit insurance is proceeding rapidly. A statement from Washington says that no announcement of the banks to be admitted to the fund will be made until all have been examined.

All Federal Reserve Member banks automatically are included in the deposit guarantee commencing January 1.

Public Affairs

Frank R. Kent, the political commentator, in a radio broadcast delivered recently under the sponsorship of the Baltimore Commercial Bank stated that the total cost of financing the New Deal will be \$11,750,000,000. He gave a very interesting outline of the various organizations of government engaged in the setup of the President's plan for prosperity. Copies of his address are being distributed by the bank.

Commodity Dollar

Not only the banking community, but business generally has had before it more actively in the past month than previously the question of dollar stabilization. The uncer-

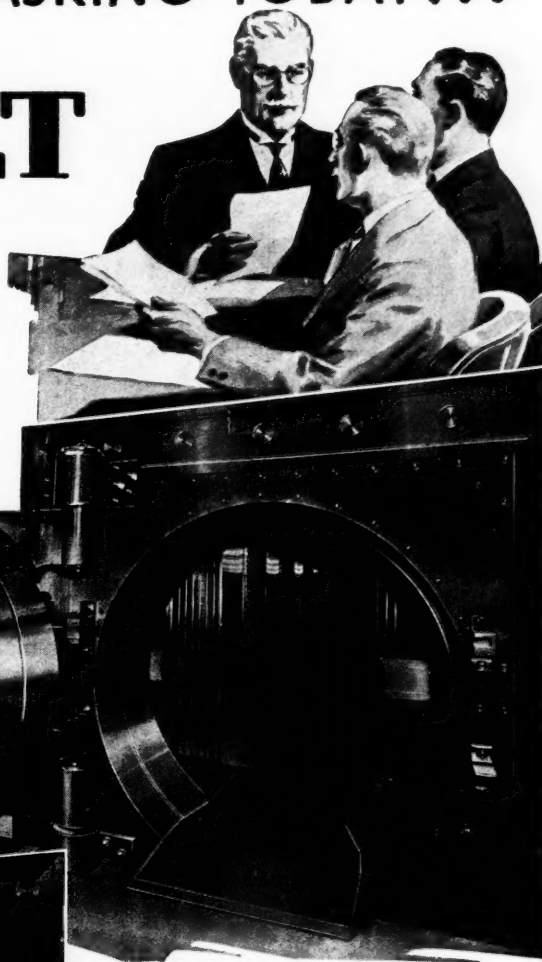
(Continued on page 32)

BANK DIRECTORS ARE ASKING TODAY...

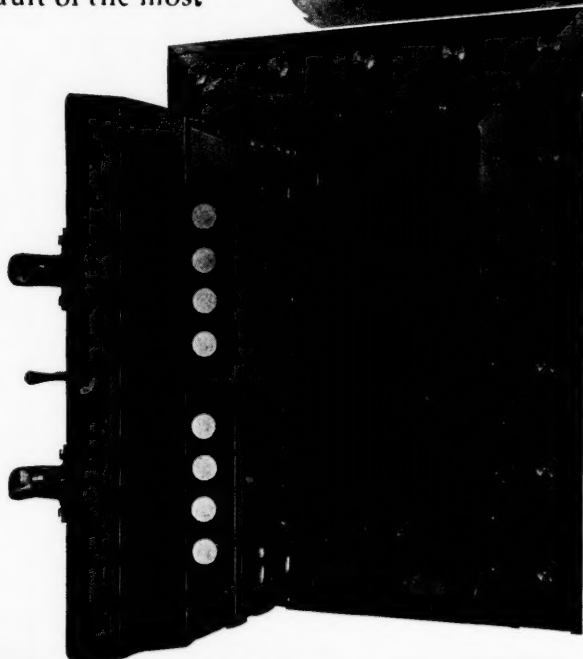
IS OUR VAULT MODERN ?

AND well may this question be raised in any bank. For never was there a more opportune time to modernize your vault facilities. Present day costs of vaults and vault equipment are surprisingly low.

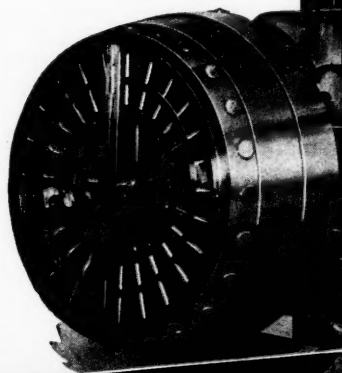
Tell us your requirements and we will gladly submit an estimate on equipping your bank with a YORK Vault of the most modern type.



A MODERN
YORK RECTANGULAR
DOOR



A MODERN YORK CIRCULAR DOOR



Write

for circular describing
the new Delayed Action Time Lock
Unit which protects against losses
from hold-ups



YORK SAFE AND LOCK CO.

• YORK, PENNSYLVANIA •

MANUFACTURERS AND BUILDERS OF THE WORLD'S GREATEST VAULTS

NEW YORK
BALTIMORE
BOSTON
PHILADELPHIA
SEATTLE

POTTSVILLE
ST. LOUIS
SAN FRANCISCO
NEW HAVEN
HOUSTON
CHICAGO



DETROIT
CLEVELAND
WASHINGTON
LOS ANGELES
PITTSBURGH
MONTREAL

HONOLULU
PARIS
HAVANA
TOKYO
SHANGHAI

FIRE AND BURGLAR PROOF SAFES AND CHESTS

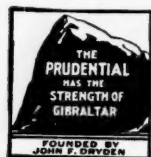
What Can be Done to Help?

An employee dies, leaving his family little or nothing for immediate and future needs.

The man for whom and the men with whom he worked feel called upon to help.

Group insurance prepares for such emergencies before they occur. It is the sensible way of joining hands to provide adequate assistance.

WE INVITE INQUIRIES
FROM EMPLOYERS



THE PRUDENTIAL
INSURANCE COMPANY OF AMERICA

EDWARD D. DUFFIELD, President
HOME OFFICE, NEWARK, N. J.

Commodity Dollar (Continued from page 30)

taintly that has existed has been due primarily to alarms sounded about printing press money and also is due to lack of information.

While the gold purchase program is still being tried, it is hoped that at an early date definite assurance will be given of an eventual stabilized dollar probably in agreement with England and France, but in any event with a base back of it of definite value.

The President stated when the gold buying plan was first announced that it was not an expedient but a policy, and that the objective was to raise commodity prices. If buying and selling gold did not accomplish that purpose, other means would be tried.

Nothing has been definitely stated to indicate that the advocates of the experiment favor outright inflationary currency. It appears to some economists that the natural result will be eventually to bring about a commodity dollar varying with the rise and fall of the price index.

In regard to the commodity dollar, James P. Warburg, who was financial adviser to the American delegation at the London Economic Conference, said in a recent speech, referring to the President's expressed desire to have a dollar of constant purchasing power, said:

"As a practical matter there cannot be any such thing as a dollar of constant purchasing power. Given the elements of the human equation, and given the political influences to which a democratic form of government will always be subject, I do not believe that as a practical matter there can be any such thing as a dollar of constant purchasing power. If human intelligence and human integrity were unable in the past to manage the comparatively simple mechanism of the gold standard, I can see no reason to suppose that the same human intelligence and same human integrity will be able to cope with the vastly more complicated mechanism of the managed commodity dollar. This is equally true in the last analysis of the automatic dollar, but more obviously true of the managed form."

The inability of the layman to comprehend currency problems is not a cause for wonder in the light of conflicting opinions expressed by experts. Whatever is done, capital must be induced to invest in industrial enterprise before we will have prosperity.

Securities Act

In its monthly Bulletin, the Guaranty Trust Company of New York says "not a single important high-grade corporate investment issue has been offered the American investing public since July 27 when the Securities Act became effective. The amount of all corporate securities placed on the market in October was only \$3,109,204, the lowest level recorded in any month since 1919." A further statement says that the new law is proving far from satisfactory and important changes are necessary to make it workable.

Cotton Loans

Government held cotton, on which farmers were given an option of six cents a pound in return for crop reduction, amounts to 2,400,000 bales. The agreement provided the farmer might direct the Secretary of Agriculture to sell his portion of the cotton by December 1st should the market price be above 10 cents a pound on the basis of New York middling. It has been above that price recently. The farmer, however, may not direct the sale of his cotton in the pool until the fact of crop reduction has been verified.

After directing the sale and paying the amount owed the Government of \$30 a bale, the farmer will receive a little more than \$20 a bale for the crop reduction in the spring of 1933. The plan now is to make a new loan to the farmer of four cents a pound, about \$20 a bale, to permit him to benefit from the subsequent increase in price and to keep the pool bales off the market. If all farmers take advantage of the new loan plan, the total amount would be \$48,000,000.

MANUFACTURERS RECORD FOR



FIRST AND MERCHANTS National Bank of Richmond

John M. Miller, Jr., President

Yes, recovery has made considerable headway.

But a bank that was able to maintain liquidity, solvency, and strong capital structure, even in the *pre-recovery* period, would seem to be as logical a choice as ever for one of your banking connections.

One of a series, "This Is the Associated System."

An Industrial Drama *with a Million Actors*

Stories telling how great industries like utilities, motors, railroads met the depression are more than statements written by accountants. They are dramas of human relationships. How the Associated System coped with the depression also makes a dramatic story. It involves—

15,000 Employees

1,417,000 Customers

250,000 Investors

It was their cooperation that

made possible the successful \$47,000,000 refinancing of 1932. Investors are now cooperating in the Plan of Rearrangement of Capitalization of Associated Gas and Electric Company, whose purpose is to strengthen its position. Successful completion of this Plan is another step towards keeping the System intact, protecting the jobs of employees, the service of customers, and the investments of security holders.

ASSOCIATED GAS & ELECTRIC SYSTEM

61 Broadway, New York





ONLY PEBBLES—

**—but put 'em
in the right place**

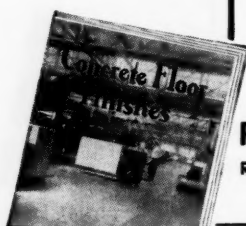
*This is the kind of aggregate
— $\frac{1}{4}$ " to $\frac{3}{4}$ " size—that you
want at the surface of your
floor to take the punishment
of traffic.*

**If you want your floors
to last longer—
cost less—
and speed factory traffic**



*A cross section of a
modern concrete floor
—note how the coarse
aggregate extends
right up to the sur-
face.*

*Here is the whole
story in a nutshell.
Write for this valu-
able booklet.*



PORTLAND CEMENT ASSOCIATION
Room 1212, 33 West Grand Avenue, Chicago
Please send me your new book "Concrete Floor Finishes."

Name.....
Address.....
City..... State.....

Durable, smooth factory floors need no longer be a matter of chance. Here's a way to be sure that your next floor will be free from scale and dust—that it will cut down maintenance costs, provide a stable foundation for machinery, a sure-tread surface for workers, a smooth road for factory traffic.

See that a proper proportion of coarse aggregate (either small pebbles or crushed rock) is included in the surface mixture of your concrete. That's the real secret of enduring floors—simple, costs no more than the old-fashioned method.

We can help you with your next job. Complete specifications are available to you, gratis. Send for this valuable information, now.

Portland Cement Association
Room 1212, 33 WEST GRAND AVENUE, CHICAGO
Concrete for Permanence

OVER THE EDITOR'S DESK

SECRETARY WALLACE of the Agricultural Department said in one of his recent speeches that in 1926 world stocks of foodstuffs began to increase and prices went down in spite of Government action to the contrary. In 1932 the carry-over accumulation for the world was more than twice that of 1926. Whether the case was over-production or under-consumption, new methods of production had a great deal to do with it. For example, in wheat production, as the Secretary points out, new methods applied not only in the United States, but in Argentina, Canada, Australia and Europe, brought the result that wheat production increased more rapidly than world population.

The Secretary further predicts that the cotton and tobacco growers of the South will have at least \$300,000,000 more spending power for the year which began August 1, 1933.

GENERAL JOHNSON, the N.R.A. Administrator, said in a recent speech in Atlanta: "There is a curious aspect to human psychology. Our gross expenditure during the war was something like 42 billions of dollars. If the war had gone into 1919, as everybody expected, it would have cost for that year alone about 30 billions of dollars. I sat in those councils and I know."

THE TIMES PICAYUNE of New Orleans refers to a new method of oil cracking reported from Moscow, Russia. It is said to consist of underground distillation and cracking of the raw oil, and will not only produce gasoline cheaply and in quantity in proportion to the oil processed, but will salvage from 50 to 90 per cent of the petroleum which ordinarily remains in the ground after a well is pumped out. It is to be tried in the Baku field. The inventor increases the temperature within the oil wells to a degree that converts the crude oil into gas and vapor.

THE AMERICAN STANDARDS ASSOCIATION is composed of professional and scientific societies, besides associations of manufacturers in various lines and departments of the government. Its purpose, as stated at its masthead, is "To provide systematic means of cooperation in establishing American standards to the end that duplication of work and the promulgation of conflicting standards may be avoided."

A recommendation has been submitted to the Association that is of interest to users of cotton goods. The proposal is for shrinkage grading. It would establish standards for shrinkage with a guarantee that every article graded will run true to the guarantee. For example, goods graded AA, the highest rating, will not shrink more than 1 per cent in laundering. It is proposed to ban the use of the term "pre-shrunk" in connection with any woven cotton fabric subject to more than 3 per cent shrinkage. Excessive shrinkage in garments labeled "pre-shrunk" has been one of the chief causes of consumer dissatisfaction.

ACCORDING TO A REPORT in the Evening Star of Washington, the Bureau of Fisheries has discovered a way to make an oyster's shell open automatically. It is first struck lightly with a hammer and then dropped into a chemical solution for from 10 to 30 minutes. At the end of that time the shell will open. Sixty per cent of the oyster crop, it is estimated, is now shucked before marketing, and reducing it to hard facts of cost, which runs to \$1,500,000 annually, it would seem that a material saving would be effected.

MANUFACTURERS RECORD FOR

THE FORD MOTOR COMPANY is to have an exposition of its own in New York City beginning December 9. It will require six acres of floor space and the exhibitors will include not only the Ford Company with its finished products, but 150 industries that have a part in its production.

Actual manufacturing operations will proceed as in the individual plants of body makers and producers of various automobile parts. Twenty completed bodies will be turned out each day.

It is said an investment of several hundred thousand dollars will be required to stage the exposition.

THE ASSOCIATION OF REAL ESTATE BOARDS is active in its work to have assessments on real estate reduced. It reports that New York City, in making up its schedule for 1934, has cut assessments on real estate more than a billion dollars. Chicago and Cook County, Illinois, have ordered a horizontal reduction in all real estate assessments of 25 per cent. This will amount to approximately \$39,000,000 in Chicago alone.

IT IS REPORTED from Great Britain that a Yorkshire scientist, Dr. John Harger, has found a way to destroy the deadly fumes from motor car exhausts. The Monthly Bulletin of the Travel and Industrial Development Association of Great Britain says the secret lies in the exhaust box, which is packed "with a mineral known as bauxite." When the exhaust gases come into contact with this, the carbon monoxide, unburned petrol and oil are all consumed. There is no back pressure and no loss of efficiency in engine power.

THE DIRECTOR OF EMERGENCY CONSERVATION WORK reports that 10,000 bushels of pine cones and other seeds are being harvested by the members of the Civilian Conservation Corps for use in reforestation work in the Tennessee Valley.

Five thousand men connected with this branch of Government aid will be located in 20 camps in Tennessee and five in Alabama. One of the major tasks will be combatting soil erosion through tree planting.

THE U. S. CONSUL GENERAL at Frankfort-on-Main, reports to the Commerce Department that the German boot and shoe industry is profiting by the marching vogue prevalent throughout Germany. Shoe manufacturers have complained for years that increasing automobile use in this country has affected their market adversely.

In Germany there are not only military or semi-military organizations, but numerous societies whose program includes marching, and millions of school children, the Consul reports, are organized into hiking clubs.

TWO COMPANIES are building huge flying boats capable of carrying 50 passengers, besides mail and express, across the Atlantic. They are intended to meet international competition for commercial air travel revenue. Ships are being built on order for the Pan-American Airways, which hopes before long to start its Northern trans-Atlantic service.

LOCAL MEAT-CURING PLANTS have been established in several Southern States in the past year. Ivanhoe, Bullock County, Ga., farmers have built a plant sufficient to take care of 20,000 pounds of meat with provision for expansion to 35,000 pounds. A ton twin-cylinder compressor, a 6-horsepower gasoline engine and other equipment were installed. The meat-curing house was built according to plans drawn by the agricultural extension engineer of Georgia. Since that plant was established other communities in Georgia and South Carolina have built plants patterned after it.

OCTOBER EXPORTS of \$194,000,000 were greater than for any month since October, 1931. In addition to normal seasonal improvement, exports increased 10 per cent since mid-summer.



FRANK SIMON, dynamic conductor of the ARMCO BAND, heard over the N. B. C. Blue Network at 10 o'clock, Eastern Time, every Friday night.

Expressed in Music

... the Spirit of the

ARMCO MILLS!

★ "ARMCO Iron and Steel Greet You!" With these clarion words of the ARMCO IRONMASTER, the stage is set for another half-hour of radio pleasure over the far-reaching Blue Network of the National Broadcasting Company. ● Every Friday night at ten o'clock, Eastern Time, millions of people gather round their sets for the zestful music of the ARMCO Band—"radio's most popular band." ● If you use iron and steel sheets and plates in making your products, the ease of forming and finishing of ARMCO metals will indeed be "music to your ears." These constantly-improved metals, many of which ARMCO originally created, run the entire gamut from hot and cold-rolled sheets to finely-finished stainless steels. ● Whatever your application, whatever your problem, we can help you earn bigger dividends on your metal investment. And remember, the great public acceptance of ARMCO Metals is a powerful influence everywhere your products are sold.

THE AMERICAN ROLLING MILL COMPANY

Executive Offices: Middletown, Ohio



IN TUNE! "The next time I see a piece of Armco metal I will put it to my ear and listen for a song or a symphony which surely must have been rolled into it." CHARLES F. KETTERING

ARMCO *means*
GOOD METAL



INDUSTRIAL NEWS

Increased Sales Volume

The November sales volume of the Addressograph-Multigraph Corporation, Cleveland, O., is reported ahead of the best sales months in 1931 and 1932. Combined volume through November 15 exceeded that of November, 1932, by 6 per cent. The combined machine sales through November 15 were 2 per cent greater than in November, 1932, and 62 per cent ahead of October, 1933.

Stowitts and Jones Form Partnership

George P. Stowitts, civil and consulting engineer with offices in the Transportation Building, Cincinnati, Ohio, has formed a partnership with Pusey Jones of Cincinnati, under the firm name of Stowitts & Jones. The firm will handle engineering details for foundations, railways, harbors, structures, highways, terminals, viaducts, elimination of grade crossings, etc.

Organizes Metallurgical Division

Organization of a Metallurgical Division has been announced by Raymond Bros., Impact Pulverizer Company, Chicago, for supplying a full line of coal pulverizing, transporting and burning equipment for complete powdered coal installations in the steel, malleable iron and allied industries. The new department will be under the direction of C. F. Herington as manager, with headquarters at the Chicago office of the company.

Hercules Develops New Resin

The Hercules Powder Company, Wilmington, Del., announces the development of a new product known as Vinsol Resin No. 1, a hard, black, tough, non-tacky, oil-resistant resin for use in insulating varnishes, impregnating compositions, lacquers, emulsion paints, and thermoplastics, especially as a raw material for thermoplastics of the pheno-formaldehyde type. Characteristics of the new material are said to differ widely from other resinous compounds. It has good dielectric properties, and should be of value in many types of insulation and sealing compounds.

Light Measuring Device

The Sight Light Corporation, Meriden, Conn., announces the Sight Meter for measuring light and to indicate the amount of light one needs for every purpose. It is an adaptation of the Western photronic (battery-less) photo-electric cell and is said to be simple and easily understood. Light in weight and small in size, it is designed for service in industry and business, education and in the home.

Tin Development Possibilities

Several areas in the South are known to have tin deposits, and as the United States consumes between 80,000 and 100,000 tons of tin a year, practically all of which is imported, there are opened possibilities for development of our tin resources. W. Washbaugh of the Piedmont Engineering Co., Charlottesville, Va., calls attention to the fact that "there are promising prospects for tin in the Blue Ridge Valley of Virginia

yet there has been no effort for 40 years to investigate and develop mines. A recent analysis of samples taken from the old dumps of 1893 shows 59.09 per cent tin, \$8 worth of gold per ton and 53 cents worth of silver per ton. The ore occurs in an arsenopyrite formation and all geologists who have examined the deposit stress that it is worth a full investigation."

Brick Kiln and Properties Offered

As receiver of the Johnson City Shale Brick Corporation, Johnson City, Tenn., J. E. Brading, will sell in Johnson City on December 28, the company's properties consisting of 51.43 acres of land, buildings and machinery including 12 down-draft kilns and one continuous gas-fired kiln containing 18 chambers, with a production capacity of 120,000 brick daily.

New Traylor District Office

The Traylor Engineering and Manufacturing Company, Allentown, Pa., announces the opening of a new district office at Little Rock, Ark., to serve Western Tennessee, Arkansas, Louisiana, Texas, Oklahoma and Kansas. The company at present maintains districts offices in New York, Chicago, Los Angeles and Seattle. The Little Rock office is in charge of B. W. Traylor, who is an expert in the lines of machinery manufactured by the Traylor organization, including crushing, cement, lime, mining and metallurgical machinery.

\$75,000,000 Tire Sales

In a letter to stockholders of the Firestone Tire and Rubber Company, Harvey S. Firestone, Chairman of the Board, says that despite business difficulties, the company's sales, including those of foreign and domestic subsidiaries and Firestone Service Stores, for the fiscal year ended October 31, 1933, reached a total of \$75,402,268. After deducting \$5,625,000 for depreciation on plants and equipment and after providing for Federal taxes and all other charges, net profits amounted to \$2,397,059.

(Continued on page 38)

Plan to visit
Florida—
this coming winter

There are many advantages offered the Farmer and Stockman in this sub-tropical climate.

Visit Florida and personally investigate the advantages—

For farm land information—write

MODEL LAND COMPANY

Flagler System

St. Augustine — Florida

ufactur-
announces
at Little
ennessee,
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maintains
ago, Los
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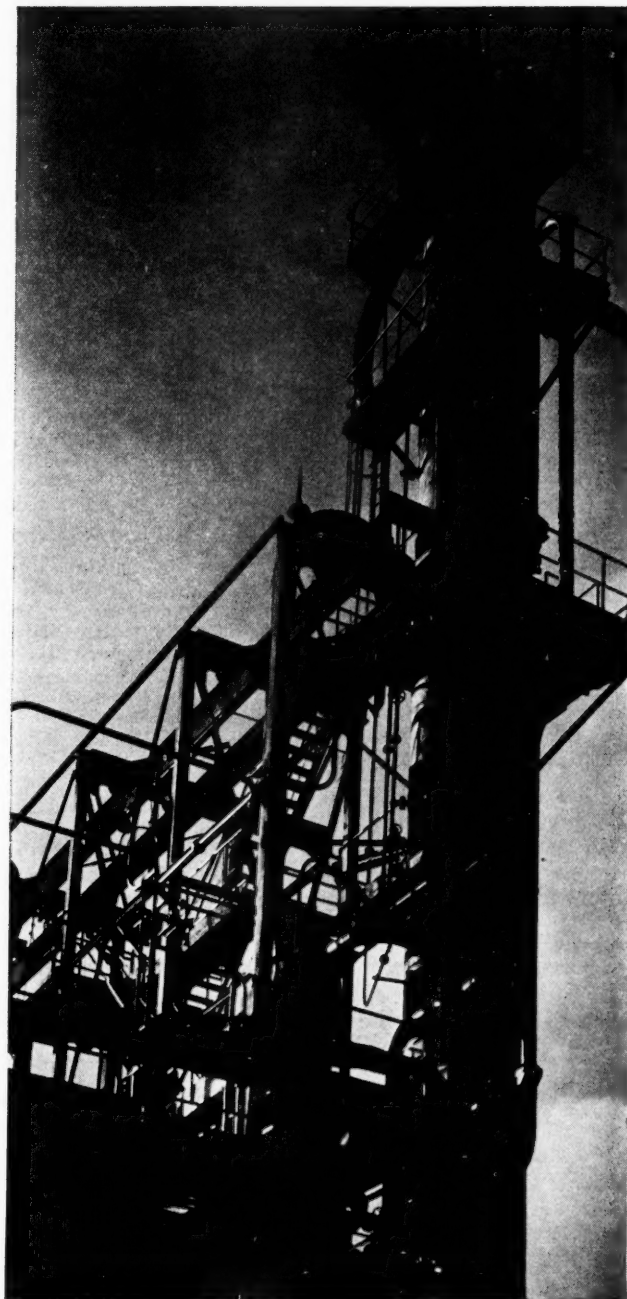
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A man casts his Shadow Here

THIS is one of Gulf's stills. It plays an important part in the making of industrial lubrication products. Note, please, that there is no sign of a human being in the picture.

Yet a man casts his shadow here—invisible though it may be to the eye.

He is The Gulf Man—the man who has pumped the best available crude oil out of the ground—who has made possible its careful transportation by pipe-line or tanker—who refines the crude into the many products needed by industry for safe, economical lubrication—who, because he has been carefully trained in Gulf's special school, will be able to recommend to industry where and how these lubricants should be used for most efficient lubrication.



It is this composite Gulf Man who has influenced some of the world's largest mills—in steel, in lumber, in cork, in glass, in aluminum, in brick, in textiles—to depend so thoroughly upon Gulf industrial lubrication.

Small wonder, then, that the shadow cast upon this Gulf still is so significant!



GULF REFINING COMPANY

INDUSTRIAL NEWS

(Continued from page 36)

Gasoline Industries Truck Association

The Gas-Powered Industrial Truck Association, with offices at room 2020, 60 East 42nd street, New York, has been organized with the following officers: Ezra W. Clark, vice president of Clark Tractor Company, Battle Creek, Mich., president; L. J. Kline, general manager of Mercury Manufacturing Company, Chicago, vice president; and John A. Cronin, secretary-treasurer. Directors include the president and vice president, ex-officio; D. H. Ross, of Ross Carrier Company, Benton Harbor, Mich.; R. C. Howell, Howell Industrial Truck Company, Cleveland, Ohio, and W. F. Hebard, of W. F. Hebard Company, Chicago. The Association has been elected to membership in the Machinery and Allied Products Institute and has adopted a fair practice code now awaiting N. R. A. approval.

Manganese Deposit

A. P. Hardee, Bronson, Fla., writes that a deposit of manganese-tungsten ore has been found on land which he owns in Levy County. A geologist reports samples assay 58 per cent manganese and contain a high percentage of wulfenite or molybdate occurring in teragonal crystals known as element tungsten. Extent of the deposit is not definitely known, but prospecting shows it to cover at least 35 acres. A heavy vein was found 30 feet under the surface.

Flexible Shaft-Couplings.—The Link-Belt Company, Chicago, has completed at its

branch at 519 Holmes avenue, Indianapolis, Ind., an illustrated catalog on flexible shaft-couplings. Three types are tabulated and priced, with special emphasis on type "RC" which employs Link-Belt Roller Chain for flexibly connecting the toothed coupling halves.

Zinc.—Under the caption of Planning, Making, Selling—Design for Profit, the New Jersey Zinc Company, New York, has issued a booklet showing what one metal—zinc—can do in all three steps of the development of a successful article.

Falk Motoreducers.—The Falk Corporation, Milwaukee, Wis., has issued Bulletin No. 270 in Falk Motoreducers, including a large line to which several new and important members have been added and not previously announced in any of the company's catalog.

Standardized Steel Sheet Piling.—New pages have been issued by the Carnegie Steel Company, Pittsburgh, Pa., for insertion in the company's catalog of Carnegie Steel Sheet Piling, representing modifications in the company's Steel Sheet Piling Series for a new standardized series which was effective November 1, 1933.

Diescherized Pipe and Tubing.—The Babcock & Wilcox Tube Company, Beaver Falls, Pa., affiliate of The Babcock & Wilcox Company, New York, has issued Bulletin T-7 on B. & W. Diescherized Pipe and Tubing, said to be the first published on this subject.

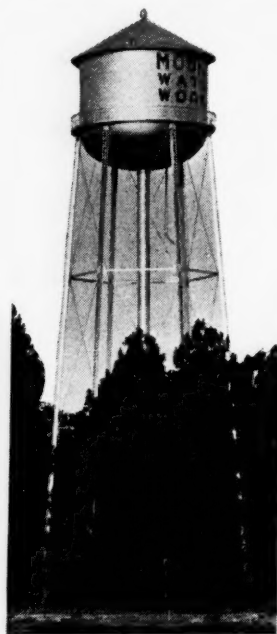
Flexible Shaft Machines.—N. A. Strand & Company, Chicago, manufacturers of flexible shafts and equipments, have issued a 64-page catalog devoted to their new ball-bearing line of Flexible Shaft Machines, showing many types and sizes, with several additional attachments of outstanding value to the manufacturing industries.

Paper and Allied Trades.—The Lockwood Trade Journal Company, Inc., New York, has issued a new edition of Lockwood's Directory of the Paper and Allied Trades. This is the 59th annual edition of the publication and contains 1092 pages. The price of the directory is \$7.50, including delivery charges, or \$7.00 cash with order. A special edition of pocket size for the use of traveling men may be had at the same prices.

Chimney Pots.—The chimney pots of London are famous the world over. The visitor from America is always impressed, as his train enters the metropolis, with the variety and character expressed in every shape and form of chimney pot that can be imagined. Architects give a great deal of thought to this prominent feature of a building. They can add to or detract from its appeal tremendously. It is possible to have attractive designs without materially adding to the cost.

The Atlantic Terra Cotta Company has just issued a book—"Chimney Pots of Atlantic Terra Cotta." It is well worth sending for. Their address is 19 West 44th Street, New York, and they have a Southern branch at the Glenn Building, Atlanta, Ga.

COLE



Cole Elevated Tank erected for Mobile Water Works.

Correct in Design Erected

WE are prepared to submit designs to meet any special requirements for tanks and towers whether on building, odd location or requiring auxiliary units.

COLE tanks offer very distinctive advantages in both design and workmanship. They meet the exacting requirements of all insurance authorities.

Our Engineering Department with an experience of 56 years will be glad to co-operate with you.

R. D. COLE MANUFACTURING CO.
Established 1854
NEWNAN, GA.

New York Office,
5 Beekman St.

SOUTHLAND PRODUCTS —WELDED OR RIVETED—



Million gal. Tank at White Sulphur Springs, W. Va.

CHATTANOOGA BOILER & TANK CO.
CHATTANOOGA, TENN.

We now manufacture and offer to the trade tanks in all sizes for pressure or gravity work. Also other steel equipment of either

**WELDED
OR RIVETED
CONSTRUCTION**

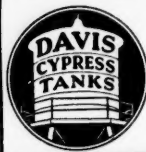
This applies to field as well as shop built equipment.

Write us for information and quotations.

DAVIS CYPRESS TANKS

FACTORY TANKS AND STEEL TOWERS

If you handle liquids, for storage or processing, Davis Cypress Tanks very likely will provide new economies. For water, common chemicals, or for mixing and storing solids and compounds. Industrial plants and railroads have used our tanks for 46 years. Ask for estimates and catalog—both sent promptly on inquiry.



G. M. DAVIS & SON
P. O. Box 5, Palatka, Florida



Southern Cities use elevated tanks to provide gravity water pressure



An elevated tank maintains a uniform gravity pressure in a municipal waterworks system at all times.

In small municipalities, the pumps are operated long enough each day to fill the tank and then shut down. The tank supplies the entire system the rest of the day.

In larger cities, the pumps are operated continuously at a uniform rate and the tank rides on the line.

When more water is pumped than used, the excess goes into the tank. This builds up a reserve which flows back into the system when more water is used than pumped.

The 100,000-gallon elevated tank illustrated at the left provides gravity water pressure in the municipal distribution system at Texas City, Texas. The system is operated by the Texas-Louisiana Power Company.

CHICAGO BRIDGE & IRON WORKS

Birmingham	1530 Fiftieth St. North	New York	3113 Hudson Terminal Bldg.	Philadelphia	1619-1700 Walnut St.
Dallas	1208 Burt Bldg.	Cleveland	2216 Rockefeller Bldg.	Detroit	1510 Lafayette Bldg.
Houston	2919 Main Street	Chicago	2106 Old Colony Bldg.	Boston	1510 Consolidated Gas Bldg.
Tulsa	1611 Thompson Bldg.	San Francisco	1040 Rialto Bldg.	Havana	Edificio Abreu 402

Plants in BIRMINGHAM, CHICAGO and GREENVILLE, PA.

B-364

MYERS

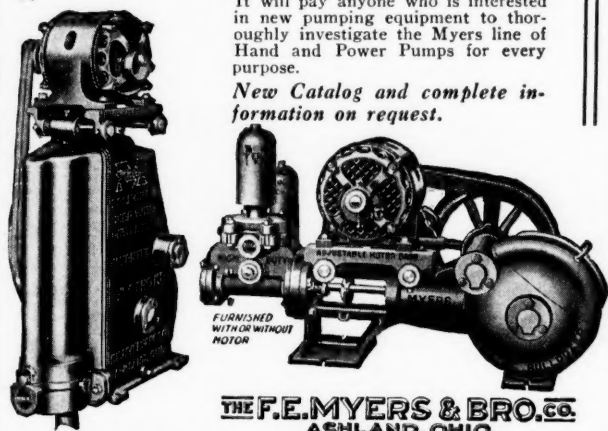
POWER PUMPS

Today, when buyers are extremely critical, Myers Self-Oiling Power Pumps and Water Systems offer greater values than ever.

Considering the completeness of the Myers line, its outstanding quality, its wide adaptability, its favorable low prices—its possibilities for economy and dependable service are so apparent that more and more users the world over are recognizing Myers superiority and are taking advantage of it through improved power water facilities for home, farm or factory.

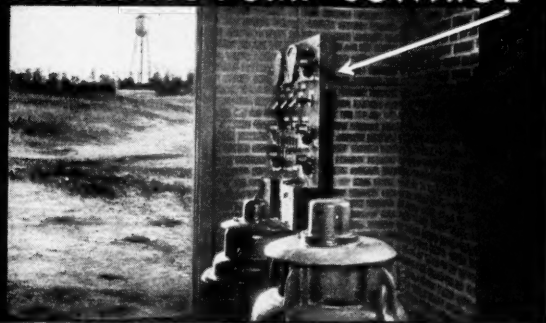
It will pay anyone who is interested in new pumping equipment to thoroughly investigate the Myers line of Hand and Power Pumps for every purpose.

New Catalog and complete information on request.



THE F.E. MYERS & BRO. CO.
ASHLAND, OHIO.

An Example of EC&M AUTOMATIC PUMP CONTROL



From Deep Well to Clear Well to Elevated Tank automatically

Clear Well is 7 ft. Deep

1st Deep Well Pump starts at 6 feet

2nd " " " " 5½ feet

1st Booster Pump starts at 250 feet

2nd " " " " 245 feet

Tank-Level controlled within 3½ ft.

Let EC&M Solve Your Pumping Problems

THE ELECTRIC CONTROLLER & MFG. CO.

2700 East 79th Street, Cleveland, Ohio.

M. R. 12-33

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CHEMICAL ACHIEVEMENTS

THE South, with its great chemical resources that destine it as the future chemical manufacturing center of the country, has a particular interest in the Exposition of Chemical Industries being held this week in New York. Exhibits, with few exceptions, contain raw materials which the South can furnish in abundance and the manufacture of which can be undertaken and expanded in this section.

The Chemical Exposition covers the latest advances in the three fields into which the chemical industry is naturally classified, namely, materials, machinery and finished products. New achievements reveal the latest research advance in the 40 industries which are classed as chemical. The last Chemical Show was held in 1931 and after the present exposition there will not be another until 1935. Each exposition, therefore, reviews two years past and indicates development for two years forward.

At the 1933 exposition are seen the most important materials or the means by which they are produced or created. Mechanically, visitors have the opportunity to see materials changed in form, classified, transported, and packaged, involving the latest developments in new materials, their uses and adaptations. While production was in low gear, research laboratories have been continually evolving new products and new plans. Old products have been revolutionized; countless new ones have been born. A wealth of data, inventions, and process patents, have evolved in respect to the unit process such as flow of fluids, crushing and grinding, mechanical operations, filtration, evaporation, drying, distillation. The need for applying cost-reducing, product-improving methods, materials, and machines, is now greater than ever. This year's Exposition focuses the most modern, most advanced, most efficient, of these methods and constitutes a great clearing house of information.

Special sections of the Exposition are devoted to materials handling equipment and instruments of precision. Plastics are the subjects of a special group. The brewing industry, a new feature this year, recalls the chemical background of an old industry now being revived in this country. From the viewpoint of chemical engineering, the latest technique in unit processes, such as distillation, is valuably applied to the old art.

Agricultural, forest, mineral waste, by-products of manufacture, compose the raw materials displays.

Finished Products

Many special products which find application in the Arts, Science and industry are shown. Included in the finished products group are chemicals, dyes, solvents, and such products as plastics, lacquers, varnishes, enamels, and protective coatings to provide waterproofing and acid-resisting characteristics to materials subject to corrosion.

Machinery and Equipment

Materials of construction, machines, equipment, and apparatus, for the plant and laboratory, on display, include instruments of precision for control of temperature, pressure, volume, time rate, and flow; also for weighing and measuring. Crushers, grinders, mixers, screens and auxiliary equipment, numerous types of special equipment, supplies and commodities which may be classed either as utility or service articles, have a prominent part.

Educational Exhibits

A feature of the Exposition, as in former years, are the educational exhibits comprising the results of most recent research on the part of large industrial organizations, technical organization, etc. Student courses and lectures on the fundamentals of Industrial Chemistry and Chemical Engineering Practices are conducted each day.

Construction Materials

Construction materials, to use the term in its fullest significance, are demonstrated and explained in the language of their latest developments. Wood, stone, and metal, the oldest materials of construction, are presented, along with the newer modifications represented by the products which have been made to order through research in the laboratories of chemistry and engineering. Glass, one of the oldest of materials, now advanced in its technology, and utilized in thousands of new ways, is one of the interesting materials at the Chemical Exposition. The originators and world's largest builders of glass-lined steel equipment show a complete glass-lined steel distillation assembly. This company's exhibit is unique in its plan to show how and where glass-lined steel

equipment can be used profitably in the three phases of chemical manufacture—laboratory, trial production, and commercial production. In addition, the present high standards of sanitary control have increased the uses of glass-lined equipment, not only in the chemical, industries, but in the food industries, in the handling of milk and brewing.

Ceramics

"Master-craftmanship in ceramics, since 1865," is the motto of one of the exhibitors featuring a number of newly developed uses of their chemical stoneware in the United States. There are on display a representative line of acid-proof chemical stoneware plant and laboratory equipment. The opening of a new field for ceramics in the chemical and process industries, is indicated as the result of research in chemical stoneware in the extensive exhibit by one of the larger companies in this field, through a new process which they describe as electrophoresis that greatly increases strength and toughness beyond the point formerly thought possible. A feature of the exhibit is corrosion-proof fans, chemical stoneware-lined, and corrosion-proof centrifugal pumps in which the stoneware impellers run at 1750 revolutions per minute.

Metals

Extensive research in metals, which has gone forward during the past two years, is impressive in the results obtained. There are shown various types of stainless steel castings, applicable to the chemical industry and in all other industries where corrosion resistance is a desirable achievement. In the field of ferrous alloys there are medium manganese steel, chrome-molybdenum steel, nickel-chromium steel, and nickel-molybdenum carburizing steel, steel of high magnetic permeability for electrical parts, and chrome-vanadium nitriding steel. Nickel and its alloys are presented in a comprehensive exhibit. Of special interest are Inconel, which is a nickel-base chromium alloy, Monel metal, and high nickel alloys.

Modern Plastics

The new plastics, now used extensively in every industry, have a prominent place. A wide range of new applications of this "material of a thousand uses" is shown. Products include Waterproof cloth, paints of exceptional durability, flexible waterproof coatings, and

(Continued on page 53)

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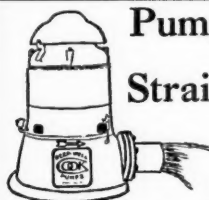
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IN STANDARD AND SPECIAL ANALYSES

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NEED FOR RESEARCH IN THE BITUMINOUS COAL INDUSTRY

By

John C. Cosgrove

President, West Virginia
Coal & Coke Corporation;
Chairman, Committee of
Ten, Coal & Heating Indus-
tries, and Chairman, Re-
search Committee, National
Coal Association.

THE coal industry has fallen short in providing or doing some of the things that are most essential if we are to keep the consumer satisfied.

The directors of the National Coal Association realizing the truth of this accusation, organized a research division and have taken care of the expense of that division in the organizing of a research corporation for the bituminous industry. There is no need to go into great detail about the studies made and the conferences held before the final plan of a corporation to be known as Bituminous Coal Research, Inc., was decided upon. Prominent operators from all parts of the country, executive officers of the coal carrying railroads and develop a program.

This program has now reached the point where it must have financial support to go forward. The possible benefits of research to the bituminous coal industry are so great that one is afraid to mention some of them because they sound so much like the sales talk of a high pressure promoter.

There is one certainty that cannot be escaped and that is, the bituminous industry has been unpardonably dilatory in starting its research work and if it is to retain even a reasonable proportion of its market it must not delay any executive heads of equipment manufacturers, in fact men from all businesses that it was thought might be interested, were consulted and they helped longer. We must all realize that the increase in labor cost on coal, which is many times the amount required for labor in the production of oil or gas, is going to bring us into still greater difficulty of maintaining our market.

Results from research are of necessity slow—for that reason a beginning is imperative. With 15,000 gas burners installed in Chicago within a few months,

we cannot wait. We must get started. We need not only technical research but we have need of market research, market studies and educational work.

We have the facilities at hand to get these things started but we need the active and financial support of everyone concerned in the industry. By this I mean, not only the coal operator but the dealer, the railroad, the equipment manufacturer and everyone who depends in whole or in part, on the consumption of bituminous coal for his livelihood.

The anthracite industry has been doing some research work for several years and the recent announcement in the "press" that next year they are going to contribute five cents per ton to each ton of coal produced, is the best argument I know of as to whether research pays. Undoubtedly, the anthracite industry has by its small program, satisfied itself that a big program is advisable; for that reason it is providing a sum which at five cents per ton, should equal \$2,000,000 per year.

Bituminous coal cannot afford to lag further behind.

Pressure Storage Tanks

By

A. F. Davis

Vice-President, The Lincoln Electric Company

TWO new pressure storage tanks, the first of their type ever constructed, were completed recently at Houston, Texas. The tanks, used to store casing head gasoline, were

built for the Warren Petroleum Company by The Chicago Bridge and Iron Works.

One of the tanks is of 38,000 barrel and the other of 55,000 barrel capacity. They were fabricated throughout by the shielded arc process of welding. This process eliminated the bucking and warping which is sometimes encountered in welding. The unusual of the features of these tanks is the design which eliminates the loss of liquid by evaporation. The tanks operate under a working pressure of 6 pounds to the square inch. The tops of the tanks are convex and the bottoms concave so that they form a pressure dome of the radial cone type. The convex top also provides excellent water drainage.

In the center of the tanks is a small storage tank containing glycerine. This is used in connection with an automatic pressure regulating device. When pressure is applied to the tank, the glycerine rises to the top of the column and acts as a safety vent to permit the gas to vent to atmosphere when this six pound pressure is exceeded. When the pressure is released, this liquid returns to the storage tank.

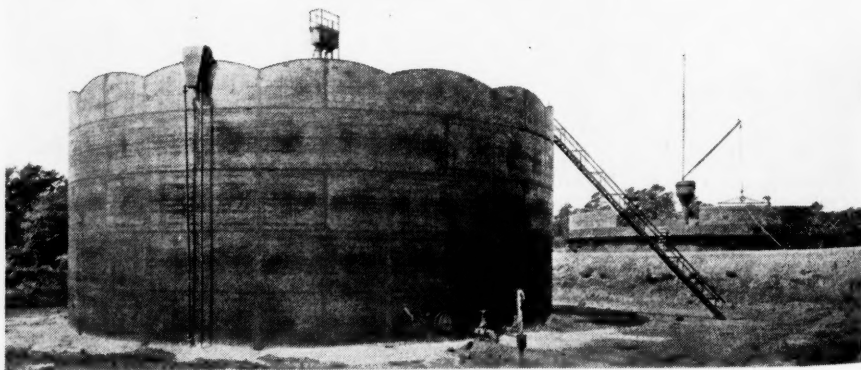
The construction of the tanks is unusual. The bottom is reinforced with radial I-beams welded to the bottom plates and tied to the roof beams with vertical tie angles, acting as stay bolts. Each of the cone-shaped sections of the bottom has a concave curve. The top is of similar construction to the bottom.

The 38,000 barrel tank is 86 feet in diameter and 38 feet in height. The larger tank, shown under construction, is 100 feet in diameter and 42 feet in height.

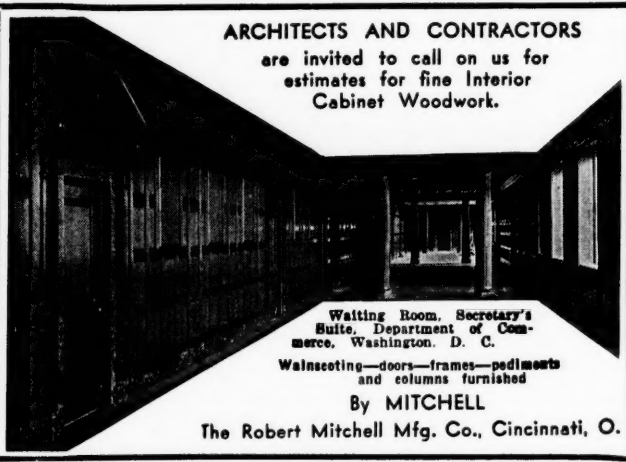
All welding was done by The Chicago Bridge and Iron Works, using equipment manufactured by The Lincoln Electric Company, Cleveland, Ohio.

Pressure Storage Tanks

Fabricated by the shielded arc process of welding—View in background shows method of constructing tank 100 feet in diameter at Houston, Tex.



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Highway Legislation

(Continued from page 26)

after January 1, 1934, will be limited to the same gross weight as is permitted upon a single unit, namely, 18,000 lbs.

The net result of this legislation cannot be pleasing to anyone interested in the development of motor vehicle transportation. A detailed study of the legislative reports from all States compiled by the National Highway Users Conference leads, frankly, to the conclusion that the enemies of highway transportation have been working constantly and very effectively while the friends have been sleeping peacefully.

The National Highway Users Conference has been in operation only one year. In that time our work has naturally been somewhat experimental in nature. Probably the most important of our functions is that of assisting the groups which are interested in highway use in each State to so coordinate their efforts in legislative matters that a united front will be presented. An almost equally important phase of our work is the compilation of facts to present to the State conferences of highway users and to the public generally—facts of all kinds relating to highway use and to the legislative problems of highway users.

In only a comparatively few States have active conferences of highway users been formed. In such States the results obtained appear to be entirely satisfactory. A careful study of the situation in each of the States where highway-user groups have been co-ordinated properly indicates clearly that the present unwholesome trend in highway legislation can be stopped effectively when any considerable proportion of the groups and organizations interested in highway use can be brought together and made to realize the problems facing them.

In commenting on specific results it is interesting to note that in Florida, where a very representative group of highway users was organized under the leadership of Joshua C. Chase, private trucks benefited from a reduction in the fees paid by them, and the fees on buses in Florida were also materially reduced. "For-hire" trucks of over 4,000 lbs. gross weight also enjoyed a reduction of 25 cents per hundred pounds. In Florida, after January 1, 1934, six-wheel trucks equipped with power brakes will be permitted an additional 2,000 pounds of gross weight; and trailers equipped with pneumatic tires will be permitted up to 16,000 lbs. Under the old law the limit was 8,000 lbs.

Your legislators, both State and National, are constantly being swamped by a flood of anti-highway propaganda. It is misleading. It pictures motor trans-

portation as the cause of the present plight of the railroads; but it ignores the fact that motor transportation now gives the railroads much more freight business than it takes away from them.

The late Calvin Coolidge, together with Alfred E. Smith, Bernard M. Baruch, Alexander Legge and Clark Howell made up the National Transportation Committee which studied the railroad situation thoroughly. The following quotation from their report is significant:

"One thing is certain. Automotive transportation is an advance in the march of progress. It is here to stay. We cannot invent restrictions for the benefit of the railroads. We can only apply such regulation and assess such taxes as would be necessary if there were no railroads and let the effect be what it may.

Progress cannot be stopped, of course; but it may be slowed up materially if we are indifferent.

Durable Brick Pavement

A number of brick pavements that have given long service at low maintenance cost were recently described in Dependable Highways issued by the National Paving Brick Association. Hundreds of brick pavements are in existence today that have given service for more than 30 years. One of these sturdy veterans is pictured herewith.

Complete records of construction cost, age and permanence by years have been kept by Columbus, O. That city began its street improvements in 1888. On December 31, 1932, there were in service approximately 539,670 square yards of streets constructed prior to 1931. The average age of all existing brick streets in Columbus is over 24 years.

Good for More Than One Generation

A Vitrified brick pavement constructed in 1902—Chase Street, Baltimore, Md.



American Road Builders Convention and Exhibit

The 31st annual convention and exhibit of the American Road Builders' Association will be held at the Stevens Hotel, Chicago, during the week of January 22. At this convention the Association's national campaign to bring before the public the necessity for a continued highway program will be launched, and emphasis will be laid upon the importance of restricting the expenditure of gasoline and motor vehicle revenues to highway and street budgets.

There still remain 75,000 miles of State highway system roads which have never been improved and that 2,400,000 miles of mud roads are the sole outlet for more than 3,000,000 farms. Congestion in municipal centers is pointed to as proof of the need of arterial highways through such centers and for belt lines around large cities. The subject of road modernization and widening will be carefully considered by engineers and officials who will meet at the convention.

The National Highway Advisory Council, composed of representatives of the affiliated organizations and divisions of the Association, will meet during the convention to study such problems as the operation of the code covering the Highway Industry; the continued financing of the program, including the source and distribution of funds, and the extent to which the Federal Government should participate in future highway developments.

Special sessions will be held by the County Highway Officials' Division and City Officials' Division, as in the past. Highway contractors, formerly represented in the highway section, will become part of many affiliations recently extended, and will form a regular section of their own with their own officers.

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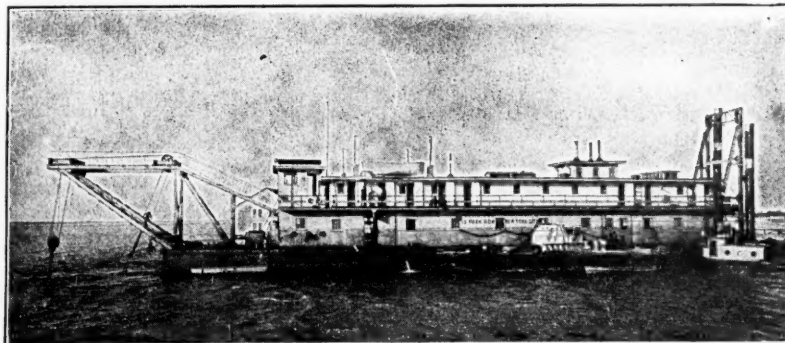
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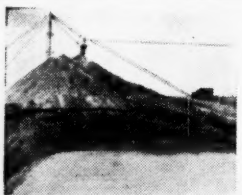
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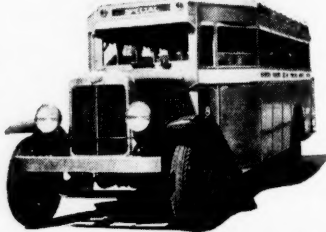
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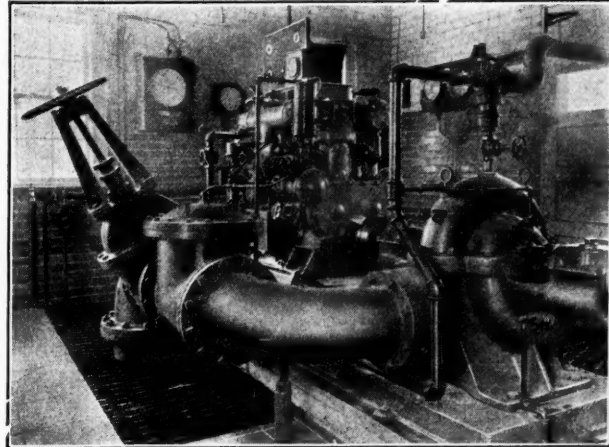
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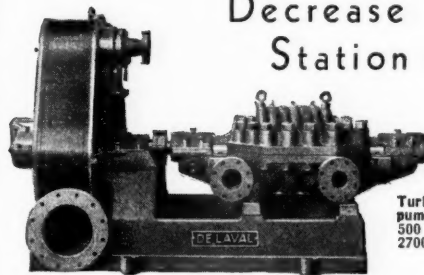
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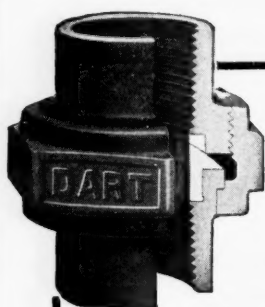
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It is the most reliable drive for boiler feed pumps and favors the best pump design.

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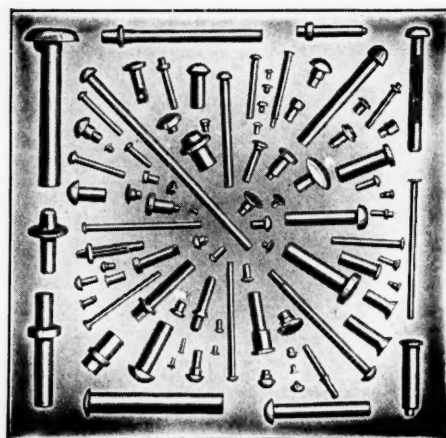
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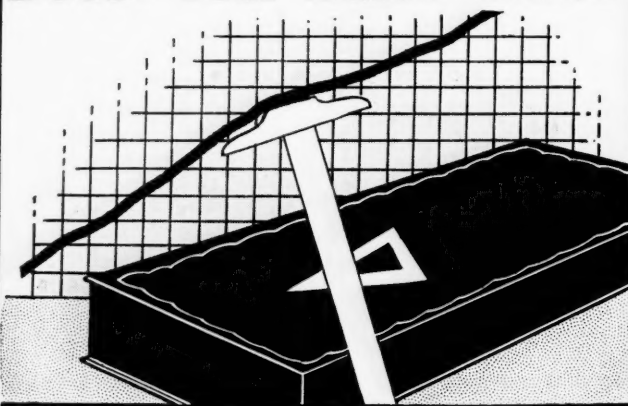
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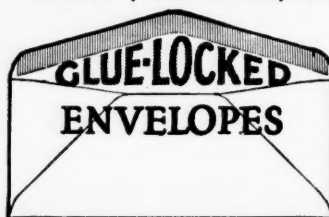
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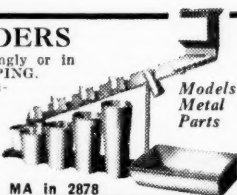
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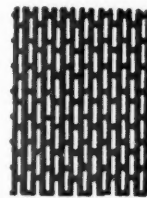
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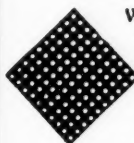
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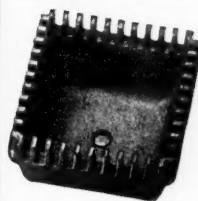
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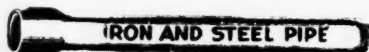
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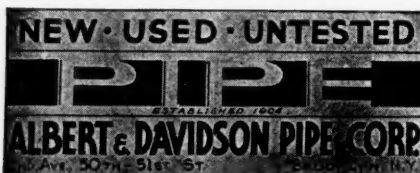
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One—4' diameter by 7' long Kennedy Air Swept Tube Mill, Herculte steel line, herringbone gears, No. 45 Simplex fan, disc feeder, 8000 lb. Herculte steel balls, one 10' primary cyclone and one 5' auxiliary cyclone with piping up to 40' in length 35,000 lbs.

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1—5 HP, 870 RPM motor to drive the Dryer (Fan and Feeder).
1—10 HP, motor to drive the Crusher.
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FOR SALE

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I will sell the property belonging to Johnson City Shale Brick Corporation, in Johnson City, Tennessee, consisting of 51.43 acres of land, on which is located 12 down-draft kilns and one continuous gas-fired kiln containing eighteen chambers, with a productive capacity of 120,000 brick per day; also all necessary machinery, equipment and buildings which are a part of the plant and are covered by the deed of trust under which this sale will be made. For detailed particulars or further information apply to

J. E. BRADING, RECEIVER
FOR JOHNSON CITY SHALE BRICK CORPORATION,
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1-1500 Cross Compound Corliss; 2-350 H.P. Nordberg; 1-300 H.P. Lane Corliss; 1-12x10 American Ball duplex; 1-80 H.P. Ames Automatic; all sizes vertical engines, 5 to 60 H.P.

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50-Steam pumps, single and duplex; tank pumps, boiler feed and general service pumps, in all sizes; all standard makes and in perfect condition.

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Complete 50 ton pulp mill with wood room, caustic recovery, digester, tanks, power plant, etc. Also beater, Jordans, stuff pumps, 72" wet machine, 60" Fourdrinier, calenders, winders, etc.

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Complete 40 ton per hour capacity Briquetting Plant with Komareck Presses, Rutledge fluxer and mixing equipment. Practically new.

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Complete line of General Equipment, Boilers, Engines, Generators, Pumps, Heaters, Tanks, Blowers, Fans, Machine Tools, etc. Write for details.

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\$6,000,000 annually leaves the South for lemons transported half way around the world. A good, thin skin, juicy, commercial size lemon, adapted to Florida growing conditions, has been developed and proved—a problem that took 20 years to solve. Advise the amount you could invest and we will submit a sound proposition offering unusual opportunities.
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Location in city or just outside of limits. Water, rail and truck transportation. Will give long-time lease or sell. No cash required from party who has a business with prospects.

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Experienced machinery salesman, now employed, and familiar with hardware and mill supply houses also oil, peanut and fertilizer plants of Southeast would like position as salesman or manufacturers agent. Address No. 9258 c/o Mfrs. Record.

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CAPITAL WANTED

Correspondence solicited with parties with capital, interested in GOLD, manganese, tin, mica and coal deposits. Piedmont Engineering Co., Box 232 Charlottesville, Va.

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Wish to contact manufacturers with export trade in Scandinavia and England as discontinuing my own business in Chicago after seven years which took me to Europe twice yearly. After my return to Denmark expect to visit U. S. at least once a year. Address D. B. Nachemsohn, 943 No. Michigan Ave., Chicago.

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Maple and Birch Timber

For Sale: 1200 acres virgin maple and birch at great sacrifice. Cost from stump to New York \$33.70 per thousand including stumpage, manufacture and freight. Wholesale price on grade \$81.50. Owners "broke" hence low price. Monthly settlement on basis of saw cut. Only parties with capital need reply. Address No. 9256 care Manufacturers Record.

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For Brick, Tile and Block,
from smallest to largest capacity.

Write for information

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While cosmopolitan in its general appeal, and modern up to this moment in its equipment, there is a peculiar flavor of The Old South here which Southerners are quick to note and appreciate. They feel at home and come back to us again and again.

Rates \$3.00 per day and up. Every room with bath or shower.
Centrally located.

The Southern Hotel
BALTIMORE

Balancing Industry With Agriculture in the South

By

John E. Rankin

Member of Congress from Mississippi

Fifteen years ago Lee County, Mississippi, was a one-crop county, and Tupelo, the county seat, typically reflected one-crop conditions.

Today, Tupelo is a thriving business center, and Lee County is one of the leading centers of the South.

The dairying industry in the county has grown by leaps and bounds since the establishment of a first class condenser in Tupelo seven years ago. Every farmer has his dairy cows and is now supplementing the income from his cotton crop with milk checks that come twice a week.

Garment manufacturing, which started less than a dozen machines only a few years ago, now employs about 2000 people. Eighty-five per cent of them live on the farms, coming in to work in the morning and returning to their homes at night,—supplementing the family income with the daily wages now paid under the NRA.

This has helped to do away with the old credit system whereby the farmer

mortgaged his crop before it was planted, and spent it before it was made.

On November 11th, Tupelo celebrated signing of the first contract made by the Tennessee Valley Authority for the sale and distribution of hydro-electric power from Muscle Shoals. The contract was delivered to the Mayor of the City on this occasion by David E. Lilienthal, a member of the Tennessee Valley Authority. Dr. Arthur E. Morgan, Chairman of the Authority, in addressing the vast throng gathered to witness this epoch-making event, spoke of the time as not far distant when this cheap hydro-electric power would reach into every farm home in this section of the State.

The contract reduces the price of electric power to the ultimate consumers, including domestic, commercial and industrial users, on an average of 68 per cent.

Chemical Achievements

(Continued from page 40)

several new plastic molding materials. Modern synthetic plastics attracted interest. These plastics created in the laboratory are built up of material from simpler forms, a product of chemical process. "The modern molding compound" is the phrase used broadly to describe the product of an exhibitor in the plas-

tics section. One of their fundamental synthetic plastic resin materials is used as a bond for plywood and lumber. Great slabs, 25 feet long and 45 inches wide, of this new material are exhibited. It is described as waterproof, moisture proof, and fire resistant. The molding compounds are applicable in a number of fields: electrical, radio, automotive, packaging, drug, cosmetic and toilet goods. Included in the display are laminating varnishes, insulating varnishes, treated paper, oil soluble resins for the paint and varnish manufacturer, plywood and veneer resins, and colloidal resins for the sand cores which are used in casting operations of the modern foundry.

Related to the demonstration of the plastics section is shown Furfural, an interesting organic chemical material which, by reason of the work of the research chemist, becomes a valuable by-product from farm crops. The waste material of the farm, such as oat hulls, has been converted to chemical compounds useful in the solvent, synthetic plastic resin, and naval stores industries.

Packaging, and the machinery used to clean, fill, label, or handle containers of every description, is the subject of a large section of the Chemical Exposition. Simplicity, flexibility, and low cost are stressed by the manufacturers.



AN IDEAL WINTER RESORT

WE are headed out of the depression. There is no doubt of that. To meet new demands on physical and mental strength, business men who have been carrying unprecedented burdens must come through—not tired and fagged out, but robust, refreshed, clear eyed, keen and alert to enter into what should be the greatest economic era this nation has ever seen.

Good health is the nation's greatest asset.

The HIGHLAND PINES INN offers unsurpassed hospitality in a charming Southern atmosphere among

congenial people; giving mental stimulation and physical refreshment outdoors from the bracing, pine-laden air and warm sunshine.

Rain or showers seldom interfere with continuous outdoor life as the sandy soil promptly absorbs all moisture and the pine trees drink in whatever may remain in the air.

Southern Pines is only 9 hours from Washington; 13 hours from New York; 20 hours from Boston and only halfway between New York and Florida on the main line of the S. A. L. Ry. with through Pullman service.

SEASON—DECEMBER TO MAY

HIGHLAND PINES INN

SOUTHERN PINES, N. C.

Golf—Polo—Riding—Tennis—Racing—Hunting—Canoeing—Motoring

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Wealth Distribution

What is fair distribution of wealth? This question has been uppermost in the minds of a great number of people since President Roosevelt has said that there must be a better distribution of wealth before there can be any assurance of national recovery. All wealth is an accumulation of surplus earnings, whether of business enterprises or labor. Without profit there can be no distribution of wealth.

"In the discussion and consideration of the many factors involved in our Recovery Program," says Geo. M. Verity, chairman of the board of the American Rolling Mill Company, "there is possibly no one statement that has been subject to more misinterpretation, misapplication, or misunderstanding, than the phrase, 'We must have a better distribution of wealth,' or 'a redistribution of wealth.'" Mr. Verity says that "it is fair to assume that in the President's statement he refers to a 'better distribution' of the wealth that is to be created from day to day, rather than that which has been accumulated. This is a fair assumption for the simple reason that it is a well-known fact that only a small fraction of the wealth that exists today is in the form of money."

Then Mr. Verity strikes at the heart of the matter when he points out that:

"With all of this discussion regarding distribution of earnings, we hear all too little as to the *source* of the *earnings* with which to make higher compensation for human effort possible.

"All through the past six months of national planning Washington has been strangely silent on the subject of a fair and necessary profit for all business enterprise.

"If capital is not allowed a reasonable return on its investment and if business is not permitted to make a reasonable profit, the very source of all regular distribution of wealth in the form of wages, salaries and interest on capital invested, will gradually but surely dry up and there could be no distribution or redistribution of any kind whatever.

"A better and more equitable return for all human effort is an objective worthy of the combined effort of all, but the people of these United States and their Administration at Washington must not overlook the rather important fact that wealth, in the form of profit on the daily business activities of the nation, must first be created before it can be distributed."

PROPOSALS

Bids close Dec. 20, 1933.

WAR DEPARTMENT, Office Constructing Quartermaster, Fort Bragg, N. C. Sealed proposals in triplicate will be received until 10:00 A. M., E. S. T., December 20, 1933, and then publicly opened for the construction and completion of one (1) Bakery Building, at Fort Bragg, N. C. Plans and specifications will be furnished upon deposit of certified check in the amount of \$10.00 made payable to Treasurer of the U. S. Information at the above address.

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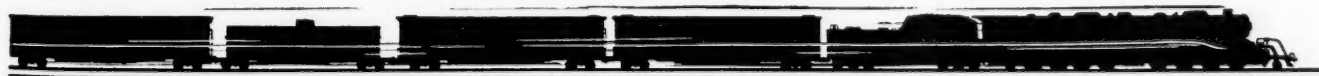


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